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THE MEDICAL REVIEW

(MEDICAL AND SURGICAL REVIEW OF REVIEWS.)

AN INDEXED AND ILLUSTRATED
MONTHLY RECORD OF ALL THAT IS IMPORTANT TO THE
PRACTITIONER IN THE MEDICAL PERIODICALS OF THE WORLD.

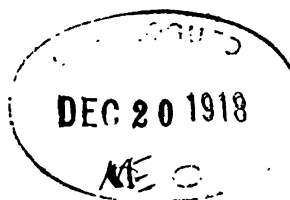
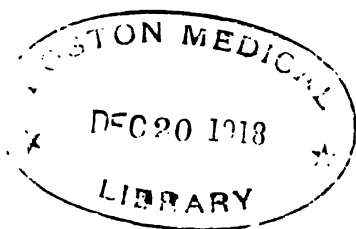
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The Medical Review.



By the suppression of all unessential matter, a paper written with a definite object—and such alone is valuable—can generally be compressed into a comparatively brief report, and yet remain a clear and readable account of the subject, so that nothing of importance is lost, and often, in lucidity, much is gained.

ANALYTICAL INDEX TO VOLUME V., 1902.

This index differs from other medical indexes in two respects : first, it is not merely an alphabetically arranged list of the titles of articles, but a statement of the most important facts therein, i.e., it is analytical ; second, it is constructed according to a definite homogeneous system. The reader's attention is drawn to the following rules, the observance of which will facilitate reference. All local affections are indexed on an anatomical basis. Therefore the name of the organ or region and not of the lesion should be sought, thus : Kidney, abscess of ; Femur, fracture of ; Leg, ulcer of, etc. The references are as far as possible arranged under the most commonly employed nouns ; thus : Brain, in place of Cerebral ; Kidney, in place of Renal. But such terms as Femoral artery, Ulnar nerve, etc. (in which the noun is a general one) are treated as if they were compound nouns. These references should be looked for under the adjectives : Femoral, Ulnar, etc. If for a local process there is a distinct name, such as Nephritis, Nephralgia, Hepatitis, etc., the references will be found under that term and not under the name of the organ—Kidney, Liver, etc.

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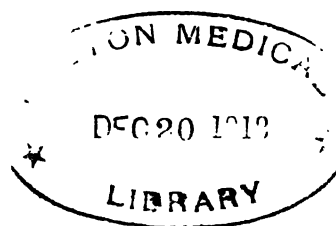
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NOTES.



FATTY TUMOURS AND OBESITY.—In a clinical lecture on this subject delivered at the London Hospital and published in the *Clinical Journal* of Jan. 1, Mr. Jonathan Hutchinson presents some interesting and original doctrine. Taking an example from vegetable pathology he points out that tumours, called "knots," occur in some species of vegetables and trees, especially in the beech tree. Little marble-like nodules, consisting of wood, and having no connection with the woody stem of the tree, form under the bark. They appear to develop as follows. On the stem a small leaf-bud forms and attempts to grow out in connection with the cambium. Owing to some deficiency in its supply of sap and in its connection with the tree it is covered in by the bark. It becomes detached, its base is narrowed, and finally there remains only an embedded bud, and although it has failed to perform its function in connection with the tree, it continues to grow into a little rounded woody mass covered in by the bark. This mass will form layer upon layer of wood. It affords a curious instance of tissue endowed with life, which, although it can no longer develop for the good of the whole structure, continues to grow. Mr. Hutchinson similarly explains the formation of fatty tumours. He suggests that during development little bits of fat become separated from the adjacent fatty tissue and encapsulated, then they grow, not necessarily early in childhood—for fatty tumours very rarely occur then—but

at some period long after childhood. In harmony with this suggestion is the fact that fatty tumour has a capsule quite detached from the adipose tissue in which it is developed, from which it can be enucleated. Similarly it has been supposed that cancers are formed from a little piece of foetal tissue that has not undergone ordinary development.

General obesity, *i.e.*, increase of fat in all parts of the body, though not necessarily an equal increase in all parts, frequently is connected with diet. But in many cases of extreme obesity diet appears to have little influence. In the majority of the less extreme cases beer-drinking and fatty and starchy foods are important factors. Race is a contributing factor. The Kaffirs and Zulus are fat races; some of the males are extremely fat with pendulous breasts, like a woman's, from increase of fat around the mammary gland. There are some races, just as there are some animals, which do not fatten. A pig is easily fattened, but it is exceedingly difficult to fatten a goat. The tendency to the accumulation of fat has some relation to the sexual system. Cattle breeders remove the ovaries or the testes from animals in order to increase the tendency to fatten. Conversely, the tendency to leanness is proportionate to the physiological use of the sexual system and to sexual excitement. Few persons with highly developed sexual habits tend to put on much fat. With the suppression of the sexual function

there is a tendency to fatten, especially in the mammary region. In young men who get abnormally fat, the sexual system is often in abeyance, the testes are very small, and sexual hair is undeveloped. They are more or less wanting in mental energy. This condition also occurs in the female sex. A perfectly healthy girl may suddenly cease to menstruate and put on fat enormously.

In obesity *lineæ albicantes* may occur in the skin, similar to those produced on the abdomen during pregnancy, and from the same cause—stretching of the skin. Mr. Hutchinson refers to the case of a young lady who, at the age of 18, suddenly ceased to menstruate and fattened. She was marked all over with long florid scars and was extremely disfigured. She became very weak and lethargic and appeared likely to die. She went to many consultants and tried everything. Finally, ovarian extract appeared to benefit her considerably. She regained health, menstruation recommenced, and the obesity diminished.

Very fat people seldom live to old age, as debility in some form ensues. The heart may become embarrassed by accumulation of fat about it, or there may be fatty degeneration of muscle. A list of cases of extreme obesity, such, for instance, as that of Daniel Lambert, is given in Gould and Pyle's work; it contains more males than females. In some cases death was quite accidental. The great quantity of fat embarrasses movement and respiration. One woman, when in bed, turned over on her face and was found suffocated; she was unable to turn over again to breathe. Many nearly died in that way; to avoid this accident they slept

in an erect position, and even then some appear to have died from the pressure on the trachea. In one case, to prevent suffocation, a rather rough measure was taken. Needles were put into the back of the chair in which the patient slept to prevent him from leaning back and going into a sound sleep. Cases of congenital corpulency are as inexplicable as those of congenital dwarfs. The children exhibited at shows are examples of it.

The converse condition of absence of subcutaneous fat, the subjects of which are described as "living skeletons," is more common in women than in men. Extreme emaciation often occurs in association with some repression of the sexual function. In some young women, who become abnormally lean, there is amenorrhœa, but leanness may occur with fair menstruation.

A few congenital cases of "living skeletons" have been recorded. Mr. Hutchinson has seen two remarkable cases in which there was also dwarfing. No subcutaneous fat could be appreciated. The sexual system remained quite in abeyance; the testes were extremely small—of the size of a hazel-nut. The voice remained infantile although nearly adult age was attained. The skin was drawn tightly over all the muscles, the contour of which, as well as that of the subcutaneous bones, was visible. The outline of the biceps along its whole length could easily be traced; the muscles themselves were of a fair size. Hair was entirely absent. In one case there was a peculiar hereditary history. The mother had not a hair on her head; she was stout, almost fat, with large mammary glands.

She had lost her hair in childhood. She had four or five daughters, all with excellent heads of hair and well developed in every way. But her youngest child and only son was quite hairless.

As to the treatment of obesity liquor potassæ used to be given, but confidence in it has been lost. A fat person must abstain from fatty materials; this is of extreme importance. Underdone beefsteaks and hot water are very efficacious. Many systems of diet have been devised. But when there is great excess of fat diet has little, if any effect. Thyroid extract may be tried cautiously; but it will probably reduce the patient's strength out of all proportion to the benefit derived.

SURGEONS FAMOUS IN WAR.—Many have been the famous surgeons who have given their services to armies in the field, but to Sir William MacCormac has been granted the melancholy honour of dying from the results of his devotion. The late President of the Royal College of Surgeons of England succumbed to dysentery contracted at the seat of war in South Africa, and his fate only serves to show that our camps, despite the almost total disappearance of all forms of sepsis, are still fraught with danger for the surgeon as well as for his patients. It is interesting, therefore, and not a little pathetic, to note the tone of optimism which pervades all that the late surgeon said concerning his recent experiences. Of his own attack of dysentery he wrote home in a spirit almost light-hearted, noting that his symptoms disappeared rapidly under the influence of bismuth. His diary, which has yet to be published, shows him fearless and buoyant in the midst of peril and fatigue, and his con-

tributions to the *Lancet*, as well as certain public speeches and letters, prove him to have taken a perfectly hopeful view of conditions existing in our camps and hospitals at a time when they were most loudly denounced in certain quarters. The truth is he had the historic sense and a historic experience, for he had been through enough campaigns to be able to view his last in its due context. The horrors of the Franco-German War, his diary of which is well-known, were stamped so indelibly in his memory that all subsequent experiences grew pale by comparison. In 1870, for instance, the carnage was not only terrific, but the antiseptic system was scarcely in existence. Many of his patients, MacCormac frankly confesses, died of pyæmia. Again operations had often to be conducted under circumstances of danger sufficient to shake the strongest nerves. On September 1, 1870, when he was on duty with other surgeons in the Caserne d' Asfeld at Sedan, a storm of projectiles flew in both directions over the hospitals for hours. "The incessant *hurr-r-r* of the mitrailleuse and the musketry fusilade made us feel as if our quarters were exceedingly hot." The Prussian shells killed *infirmiers* and patients alike. "I suppose one might perhaps become accustomed to it in time, but, at first, operating in the direct line of fire, as we were, with the shells continually whizzing in our ears, and hitting the building from time to time, has a somewhat disquieting influence." It is interesting to compare these with Zola's classic descriptions of the work of the surgeons in the "Débâcle" MacCormac was one of the first to enter the village of Sedan the day after the famous battle. He found no living thing there save cats. He was always careful to point out that the miseries of the South African war were as nothing to those of 1870. The Mauser, he

had occasion to show, wounds in a cleanly manner. It gives the minimum wound: the Mauser-bullet he described as "gentlemanly."

The late Sir William MacCormac is not the first official head of the profession of Surgery who won early laurels on the battlefield. The first master of the Surgeons' Company, John Ranby, when principal Sergeant-Surgeon to George II., accompanied the King in his German campaign of 1743. He was present at Dettingen, and the Duke of Cumberland was one of his patients. Ranby was a notable character in his day, and appears in Fielding's "Tom Jones." His little work upon "The method of treating Gunshot Wounds" ran into three editions, and, as his biographer, Mr. D'Arcy Power, notes "fore-shadows that associated aid for the wounded in battle which has only recently been adopted by the formation of an Army Medical Service."

Musket-wounds in Ranby's time were enormous: he advocates the use of the finger as the best means of probing them. The Duke of Cumberland was shot through the calf of the leg by a grape shot, which made an orifice the size of a hen's egg. It "bled rather more than what is usual for this sort of wound to do at first, especially as I had not omitted the necessary precaution of taking away from the arm in the field of action very little less than twenty ounces of blood." Poor "Butcher" Cumberland, as he came afterwards to be called, was transported some fifteen miles by coach after a bad night, and was bled again twice, before Ranby allowed him to pass into the hands of the royal physician. As a set-off to the bleeding, it should, however, be mentioned that Ranby gave his patient quantities of bark, a medicine in the virtues of which he was a firm believer.

A still greater authority on gunshot wounds is John Hunter, who was a staff-surgeon in Hodgson and Keppell's expedition to Belleisle, and served with the British army in Portugal in 1762. To these campaigns he owed his extensive knowledge of gunshot wounds and inflammation, afterwards embodied in his greatest work which he did not live to publish. The section of Hunter's "Treatise on the Blood," devoted to gunshot wounds, is little more than forty pages long, but in it the founder of scientific surgery reduces to a system the rule-of-thumb practice of his predecessors. It is curious to find him recommending bleeding, though not to the extent practised by Ranby, or even later by Guthrie. We have no vivid pictures of battle-surgery in Hunter's book—he barely mentions the landing of the English army in Belleisle and relates a few cases of wounds during the campaigns.

The vivid works of the rugged and imperious Guthrie, thrice President of the Royal College of Surgeons, bridge the chasm between Hunter's day and MacCormac's. As Assistant-Surgeon to the 19th Regiment, Guthrie served five years in Canada and in the Peninsula campaign, during which he often displayed as good soldierly as surgical qualities. In many great engagements he had principal charge of the wounded, and won the repeated encomiums of the Iron Duke. At Waterloo he was successful in amputating at the hip-joint, a proceeding since called Guthrie's "bloody operation," and once divided the muscles of the calf in order to tie the main artery. Being innovations, these operations excited the greatest interest. In his well-known book on "Gunshot Wounds" first published in 1814, Guthrie strongly advises "immediate amputation in gunshot injuries of the extremities, rather than delay to the

so-called secondary period, a principle which marks an epoch in military surgery." Another famous work of his is "The Surgery of the War in Portugal, Spain, France, and the Netherlands, from the battle of Rolica, in 1808, to that of Waterloo, in 1815, with Additions relating to those in the Crimea, in 1854-5." The book has been described as "most interesting and graphic," and of much value as a comment on military arrangements.

Another famous Crimean surgeon was the late John Whitaker Hulke, twice President of the Royal College of Surgeons. He volunteered early in the Campaign, in 1855, was appointed Assistant-Surgeon to the British Civil Hospital at Smyrna, and was sent to Sebastopol, where to quote his obituary notice, in the *Lancet* of February 1895, "he bore himself, in the opinion of everyone, as a soldier should bear himself, in that awful campaign of irremediable sickness, gross mismanagement, and gallantry as often as not ineffective."

SOME THIRTEENTH CENTURY PRESCRIPTIONS.—In the *Bibliothèque Nationale* of Paris there is, according to Dr. H. Stadler of Munich, a thirteenth or fourteenth century manuscript, which contains a remarkable collection of prescriptions. It is written in Latin, and a few selections may be of interest. For deafness the following is ordered: "Take a houseleek (*sempervivum tectorum*) and rub it up carefully. Then roast four fresh fat eels of equal

length on a spit, collect the fat as it melts, and mix it with the fat of foxes and the juice of the houseleek. Drop the mixture in the sound ear at bed-time, and it will run through into the diseased organ. The following day drop it into the diseased ear, and on the third day, as hot as possible, into the sound ear, and thou wilt be cured." For diseases of the eye: "Fill an egg cup with the juice of fennel and rue, purified honey, and the urine of a child, and bathe the eyes with it." For megrim: "Prepare a goose for roasting, stuff it with water-cress, catmint, and lard, and eat the melted fat after it has cooled as long as may be necessary." If this should fail: "Sing thrice, if necessary a whole psalm, and then cover the head with the juice of wormwood, yarrow, and rue." In order to dye the hair white, "triturate the dung of swallows with ox-gall and smear it over the head frequently; if this should fail dissolve the fæces of a child or man in water and put it on the head." To promote the growth of the hair: "Burn many bees in an earthen jar, rub them up with oil, and smear the mixture over the head. Take care that none comes in contact with the forehead." Or "Rub up gum-sandarac with the heads of flies, honey, and vinegar and place it on the head." For painful hollow teeth: "Fill them with ravens' dung." For hæmaturia: "Drink fasting a roast stag's heart with milk." For stone: "The patient should drink urine taken from the bladder of a boar mixed with the blood of a he-goat."

LEADING ARTICLES.

REVUE MÉDICALE DE LA SUISSE ROMANDE,
Nov. 20, p. 645.

The Syphon in Paracentesis Thoracis.

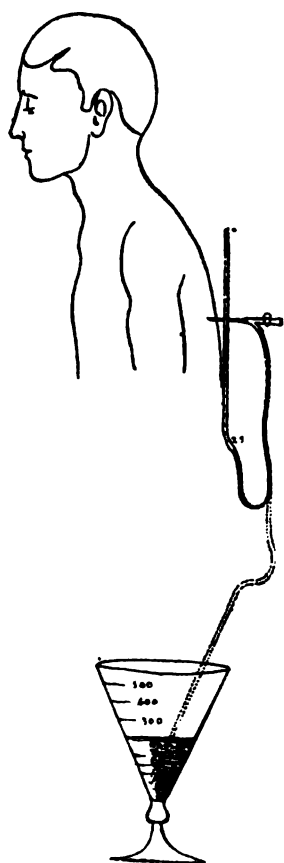
By PROF. L. BARD.

Paracentesis thoracis is attended with certain dangers. To avoid these various rules have been laid down. The most timorous writers recommend that not more than to 200 to 300 gm. should be removed; Dieulafoy says that not more than a litre (35 oz.) should be removed at one sitting; Potain fixed the quantity at half the supposed amount of the effusion. Some attach more importance to limiting the rate of evacuation, others to the force of aspiration. Pitres thinks that the latter should not exceed 20 mm. of mercury. All these rules are arbitrary. No rule applies to even the majority of cases, for in one case an amount may be withdrawn with advantage far in excess of what one authority would consider safe, while in another the removal of even a small amount may produce marked symptoms. The writer used to be guided by the feelings of the patient. Whenever there was a sense of oppression or evidence of dyspnœa he arrested the flow of the fluid. But this rule is not reliable as some patients complain too readily, others too tardily. Hence the value of an objective test as to the amount of fluid which should be removed. Such is supplied by the following method.

The aspirator is discarded and the fluid is removed by the aid of syphonage. A hollow needle like that of Potain's aspirator is used, and is made by preference in one piece, to avoid the defective joints which are almost inevitable with two pieces, for the entrance of air would vitiate the method. The trochar has an internal calibre of 2.5 mm. To it is

attached laterally an indiarubber tube one metre long which terminates in a glass tube of the same calibre 25 cm. long, slightly bent where the indiarubber tube joins it, in order to prevent kinking of this latter. (Fig.)

The glass tube is graduated in centimetres. At the time of operation the lower extremity is plunged below the surface of a vessel containing some aseptic fluid. The patient being in a sitting posture, the trochar is entered by preference at the 8th intercostal space. When the tap is turned the fact that the tube is below the surface of fluid and its length prevent the entry of air in the event of there being negative intrapleural pressure. Usually there is sufficient positive pressure to drive some of the effusion and air down the tube. If this is delayed, making the patient cough will start the flow. The tube, which acts as a syphon, may be charged beforehand with the aseptic fluid, but this is seldom necessary. As soon as the syphon is filled and only a few drops of fluid have escaped—so as to drive out the contained air—the glass tube is withdrawn from the vessel. The flow is arrested by pinching the rubber, and the glass tube is raised to a vertical position beside the patient's thorax and at right angles to the canula, as shown in the Fig. Oscillations of the column of fluid in the glass tube will now be produced by the respiratory movements and they are noted in relation to the trocar. The level of the fluid in the tube shows the intrapleural pressure, though not quite accurately. The respiratory oscillations of the column of fluid vary from + 2 or 3 to + 8 or 10 cm. The highest were found in cases of large effusion were + 10 or 11 during inspiration and + 16 to 17 during expiration. The lowest were—2 to—3 cm. on inspiration,



to + 3 or + 4 in expiration. Forced inspiration or cough usually caused these limits to be exceeded. The expiratory level of the oscillations during quiet breathing is below the upper level of the thoracic dulness as found by percussion. In cases of large effusion nearly reaching the clavicle, with an expiratory elevation of + 17 cm. in the tube the upper limit of the dulness was 25 or even 27 cm. above the canula at the point of puncture. Having ascertained the pressure, the tube is lowered and the flow takes place. This can be regulated by the length of the syphon, *i.e.*, by raising or lowering its orifice. It is advisable to interrupt the discharge of the fluid through the tube from time to time, in order to ascertain the respiratory oscillations in the

tube, as in the first instance. When they become reduced to a little below the level of the canula, *i.e.*, when they take place between —5 or —6 and —1 or —2, it is time to arrest the flow. Thus important indications are given of the amount of variation in intrapleural pressure. But these phenomena are only of value if no air has been allowed to enter the apparatus. If it has, it must be got rid of by allowing some of the fluid to flow rapidly down the tube, but careful construction of the canula should obviate any such accident. In the later stages of thoracentesis the measure of intrapleural pressure may be falsified by the application of the lung to the internal orifice of the canula. The only difficulty in reading the levels in the tube is due to cough and abnormal respiratory movements especially in nervous patients. Such are most likely to occur at the end of thoracentesis carried too far but observation of the rule laid down will remove this difficulty of any bad result. When the whole length of the syphon tube is used, that is to say one metre or more, according to the height of the puncture above the level of the ground, it is possible to continue the evacuation as long as it is useful, but not to the extent possible with an aspirator.

The best results may be obtained by this method. There is immediate improvement in the breathing, no accidents occur, and the fluid does not reappear. These results are obtained on systematic cessation of tapping whenever the oscillations fall below the level of the canula, that is to say, between the limits stated above. The intrapleural pressure has then almost regained its physiological level—a point which appears to be the most favourable for recovery. It is easy to understand why this method is superior to aspiration. The latter does not show the amount of diminution of the intrapleural pressure. Variations in the

intrapleural pressure depend on the volume of the fluid discharged and not on the force of suction. The effusion acts mechanically in causing intrapleural pressure by its volume, but the modifications due to thoracentesis do not altogether depend on the amount of fluid removed.

The writer gives two cases illustrating the value of this method. In one in which a large effusion reached to the clavicle and the initial pressure was $+12$ to $+16$, 3,300 gm. of fluid were withdrawn before the point -1 to -2 was reached. Notwithstanding the quantity of fluid withdrawn there were no uncomfortable symptoms. In a similar case, differing only in somewhat more intense dyspnoea, the initial pressure being $+11$ to $+16$ the tapping was suspended on the withdrawal of 1,700 gm. of fluid with a terminal pressure in the tube of -15 to -9 . There were no subsequent complications, but there was not much change for the better. Rapid return of the effusion occurred, and 48 hours after the first tapping the dyspnoea was again intense and the fluid was as abundant as ever. A second paracentesis was performed, the pressure being $+10$ to $+17$, but was suspended so soon as the pressure shewed -4 to $+1$, 1,500 gm. having been withdrawn. Notwithstanding the short interval between these two tapplings and the little difference in the amount of evacuated fluid in each, there was no return of the effusion and the patient completely recovered. Such a difference in the two results can be explained only by the difference in the terminal pressures.

The writer insists on the efficacy of the old syphon method of evacuating fluid from the chest combined with his method of estimating the intrathoracic pressure during the operation. It has been objected to the

syphon that it is not possible by it to completely empty the chest. The writer insists that by the syphon more fluid can be removed than is desirable. This method is not applicable to empyemata.

AMERICAN JOURNAL OF MED. SCIENCES,
NOV., p. 527.

**Outbreak of Noma in a Children's
Institute.**

BY GEORGE BLUMER, M.D., AND ANDREW
MACFARLANE, M.D.

Noma occurs in children recovering from acute diseases, especially measles, scarlatina, and typhoid fever, who are under insanitary conditions—poor food, uncleanness, and unhealthy and damp dwellings. Osler says that at least one-half of the cases developed during convalescence from measles, and Krahn found that 55 out of 133 cases developed after measles (*Mittheilungun aus den Grenzgebieten der Med. und Chirurg.*, 1900).

In April, 1900, an epidemic of measles of a severe type occurred at the Albany Orphan Asylum, an institution containing 450 children of both sexes, ranging in ages from 2 to 15. There were 173 cases; in 12 pneumonia occurred, in 5 pneumonia and noma, in 11 noma without other complication, in 4 lesions which were considered incipient noma but which were arrested by cauterisation. Of the 12 cases of pneumonia, 2 were fatal, the 5 cases of pneumonia and noma were all fatal, and 2 of the uncomplicated cases of noma were fatal. Of the 16 cases of noma the mouth alone was affected in 4, the mouth and other parts (the ear and vulva) in 3, the vulva alone in 7, the vulva and other parts in 7, the rectum alone in 3, and the rectum and other



FIG. 1.

parts in 5. Of the fatal cases of noma the mouth was involved in 3 and the rectum in 4; pneumonia was the immediate cause of death in 5 of these cases. The ages of the children who suffered from noma ranged from 3 to 12. No predisposing cause could be found in the surroundings: hygienic and dietetic conditions were excellent, and the average annual mortality of the institution was only 19·4 per 1,000. Although there were almost as many cases of measles in boys as in girls, all the cases of noma occurred in the girls' dormitory except 2 which occurred in boys who were in the infirmary at the same time as were girls suffering from noma.

The first case was detected by the putrid odour from a child with noma of the vulva. The other cases occurred in this dormitory; contagion by soap or towels was possible.

Complete isolation arrested the outbreak. The disease began with slight ulceration of mucous membrane and a surrounding area of intense hardness, which quickly became dark and broke down. In some cases the process spread with alarming rapidity, the tissue appearing to necrose *en masse*. When the destruction was not too extensive the application of Paquelin's cautery under chloroform seemed to arrest the gangrene. In cover-slip preparations only one organism was constantly present—a leptotrix about $\frac{1}{2}$ a micron in breadth and varying from 5 microns to 20 in length. The short forms were usually bent, the long ones curled or wavy.

The following cases are typical:—

In a girl, aged 3, several days after the disappearance of the rash of measles gangrenous ulcers were found on both labiæ majorae with

a hard areola. The labiæ were much swollen (Fig. 1). Thorough cauterization under chloroform with Paquelin's instrument arrested the gangrene, and the ulcers healed under zinc ointment. The temperature was above 101° only 2 days, and after 10 days remained normal.

In a girl, aged 6, a week after the disappearance of the rash slight ulceration with surrounding infiltration was found on the posterior aspect of the vulva. This gradually extended backward to the rectum. The vulva then became much swollen and dark red. The inflammation extended on all sides 2 inches beyond the vulva. After a week, during which the condition seemed stationary, the inflamed area sloughed *en masse*. The temperature was normal or subnormal, and the pulse very weak and irregular. After the sloughing the wound healed rapidly. There is now a constant fæcal discharge from the vagina.



FIG. 2.

A girl, aged 7, had a mild attack of measles. Six days afterwards a putrid odour was detected, which, was found to come from a gangrenous ulcer of the vulva. The centre of the ulcer was black, and the surrounding tissue hard and dark brown. The process rapidly extended to the rectum, and all the intervening and surrounding tissue sloughed completely (Fig. 2). The temperature did rise above 100° and the pulse was of good quality and ranged from 84 to 106.

A boy, aged $3\frac{1}{2}$ years, had measles with high fever. He became much prostrated. The tonsils were enlarged and ulcerated, and there was marked dyspnoea. Dulness with bronchial breathing was found over both lungs. Gangrene of the rectum was discovered 10 days after the occurrence of the measles. Two days later the mouth and tonsils were gangrenous, and 3 days later death occurred.

In old medical literature outbreaks of noma in institutions are described. Savard (*Nouveau recueil d'observations chirurgicales*, 1702), and Poupert, (*Historie de l'académie royale des sciences, année, 1669*), saw an epidemic of noma in the old Hotel Dieu, Paris, in 1699. Martin (*Recueil des actes de la Société de Lyon*, 1798), noted its occurrence in the Charity Hospital of Lyon in 1796, and considered the ravages of the Revolution a factor.

LANCET, Nov. 23, p. 1412.

Basal Drainage of the Arachnoid for the Relief of Intracranial Pressure.

By DR. E. DEANESLEY.

The probable cause of the accumulation of cerebro-spinal fluid in the ventricles is blocking of the foramen of Magendie in the roof of the fourth ventricle. This foramen may be

obstructed by the effusion of lymph, as in tuberculous meningitis, or by pressure from a tumour or abscess of the cerebellum.

CASE 1.—A boy, aged 14, was admitted to hospital on March 9, 1900, complaining of severe headache. He had measles two years previously and afterwards a slight discharge from both ears, which left him a little deaf on the right side. About the beginning of Feb. he was taken ill with pain in the head and back of the neck. He remained at home for 5 weeks with pain and sickness and was treated for influenza.

There was intense double optic neuritis, but vision was not noticeably impaired. There was still a little purulent discharge in the left meatus. Large doses of potassium iodide were given. The headache improved, the vomiting, which had never been frequent or typically "cerebral" ceased, and he was discharged. The headache recurred and on May 31st he was readmitted. He was bright and intelligent and had rather prominent eyes. The optic neuritis was still intense. A small perforation in the left Shrapnel's membrane was the only sign of old or recent otitis. He was, however, slightly deaf in the right ear. In the absence of localising symptoms a provisional diagnosis of cerebellar tumour was made and it was decided to trephine the posterior fossa in order to examine the cerebellum, to relieve the intracranial tension, and to prevent the danger of optic atrophy and blindness. The possibility of cerebellar abscess from otitis, although this appeared very improbable, and the greater evidence of past otitis on the left side, led to the selection of that side for trephining.

A curved flap was turned down and a $\frac{3}{4}$ in. trephine opening was made a little to the left of the middle line immediately below the lateral sinus. On incising the dura mater

the cerebellum bulged through and pulsed faintly. No sign of abscess or tumour was detected. A curved director was passed beneath the cerebellum in the direction of the fourth ventricle for over an inch but no fluid escaped. Two silk drains were passed some distance beneath the cerebellum and brought out one at each angle of the scalp wound, which was closed without replacing the bone or suturing the dura mater. Headache was at once relieved. A little serous discharge escaped from one angle of the wound when dressed on the eighth day. The following day both drains were removed and the wound had healed. On the twelfth day the patient got up but vomited on returning to bed. The neuritis was less. 22 days after operation it had almost cleared up, but the upper inner quadrants were still indistinct. He returned home 4 weeks after the operation.

Headache soon returned but in severe paroxysms instead of continuously. The bulging through the trephine opening increased till it projected nearly an inch above the scalp. This swelling was partly reducible and felt like fluid. The paroxysms of headache were relieved by antipyrin and gradually ceased. Four months after operation the swelling had almost disappeared and the lad returned to work as an errand boy. On Dec. 12 there was no sign of past neuritis or optic atrophy. He was well and free from symptoms. The swelling over the trephine opening was variable. It was about $1\frac{1}{2}$ in. in diameter and about $\frac{3}{4}$ in. high. At present (Sept., 1901) he is well.

CASE 2.—A man, aged 30, was admitted on April 16, 1901. He had suffered for 9 months from pains in the head and partial deafness in the left ear. There was a history of possible syphilis 4 years before, and he had been treated for his headache with mercury and iodide with-

out effect. He was strongly built and appeared healthy. His head was somewhat large, with prominent, overhanging forehead. The pain was chiefly frontal and worse on the left side. It was made worse by use of the eyes, and he complained that his sight was somewhat indistinct. There were marked nystagmus on looking either to the right or the left, and intense double optic neuritis with swelling of the discs. Both tympanic membranes were normal, but there was some nerve deafness on the left side. He complained of numbness over an area which included the greater part of the right cheek, the whole of the upper lip, and the upper half of the lower lip. This area was partially insensitive to touch, and the anæsthesia affected the corresponding areas of mucous membrane within the mouth. He complained of some difficulty of articulation, but his speech was not noticeably indistinct. He could stand with the eyes closed, but on walking staggered from side to side. He had also subjective feelings of giddiness. There was marked incoordination of the hands. The knee-jerks were much increased. It was clear that there was increased intracranial tension and that the morbid process involved cranial nerves on both sides of the base of the brain. Tumour of the cerebellum involving the middle lobe and encroaching on the pons seemed the most probable diagnosis.

The posterior fossa was opened on the right side with a one-inch trephine. Hæmorrhage from the veins was profuse and difficult to check. After incising the dura mater the cerebellum bulged into the aperture without pulsation. There was no sign of tumour. The bony opening was enlarged as much as possible in all directions in order to relieve tension permanently. A curved blunt elevator

was passed inwards beneath the cerebellum towards the fourth ventricle but no fluid was reached. A silk drain was inserted in the same position and the wound was closed. The dura mater was not sutured. In the evening the temperature rose to 99° , the pulse to 96, and the respirations to 24. The following day there was persistent vomiting. Articulation was indistinct and slow, like that of bulbar paralysis. The silk drain was removed on the second day, but on the third day there was a profuse discharge of cerebro-spinal fluid from the wound. This continued for 4 weeks. The wound was healed and the scalp sutures were removed at the end of a week, but the cerebro-spinal fluid continued to drain from a small sinus left by the silk. This finally closed on May 31. On the tenth day the temperature rose from its previous level of from 97° to 99° to 103° and then gradually subsided to normal. This corresponded to a temporary partial cessation of flow of cerebro-spinal fluid and the fall of temperature was accompanied by a resumed profuse flow.

The operation at once relieved the headache and numbness of the face, but in other respects the condition was worse. Speech was slow and indistinct, and the patient could not sit up in bed or feed himself without assistance. This condition slowly improved. Seven weeks after operation he could stand with a little help and the optic neuritis had entirely subsided. Now (4 months after the operation) he is in good general health and free from pain. His speech is slow, jerky, and indistinct, but less so than it was. His sight is rather dim, but the nystagmus has disappeared. He is able to stand while holding a table and thinks he is getting stronger. He walks when supported with an extremely spastic gait, lifting the feet very high. The knee-jerks are still increased.

There is no sign of bulging over the trephine opening.

CASE 3.—A lad, aged 18, was admitted to hospital on June 26, 1901. For 5 months his gait was peculiar and he sometimes complained of headache and giddiness. On June 14, he was suddenly seized with acute pain in the head. He left work, went home, and vomited. Next day the pain continued and he vomited again. There were a temperature of 102.4° , retraction of the head, stiffness of the neck, a slow pulse in proportion to the temperature, photophobia, and constipation. He remained for 10 days in this condition, the pain being unrelieved by purgation, ice-caps, and leeches. In hospital he was curled up in bed. The pain was continuous with paroxysmal exacerbations; it began in the occipital region and moved round to the left mastoid region. The temperature was 102.6° and the pulse 60. The head was retracted and very stiff. There was double optic neuritis. The knee-jerks were increased.

The left occipital bone was exposed below the lateral sinus as close to the middle line as possible and an opening into the posterior fossa was made with a gouge and afterwards enlarged with forceps to the diameter of $\frac{1}{2}$ in. The dura mater was incised and a curved elevator was passed beneath the cerebellum into the fourth ventricle. There was a gush of about an ounce of clear fluid and the cerebellum, which was protruded and motionless, immediately sank within the skull and pulsed normally. The pulse momentarily slowed, but soon rose again to 72. A drain of silk-worm gut strands was passed into the arachnoid space for about an inch and brought out at one angle of the wound, which was otherwise completely closed. Two and a half hours later there was no headache but the head was still retracted. Convalescence

was rapid, but the temperature varied daily between 98° and 104° for 4 days and did not reach normal till the ninth day. The symptoms gradually subsided. The wound healed by primary union and the drain was removed at the end of a week. No fluid appeared to have drained by it after the first 24 hours. The optic neuritis subsided slowly. Two months after operation the patient was apparently in good health and free from all signs except subsiding optic neuritis.

The nature of the disease in the 3 cases is uncertain. They all presented symptoms of increased intracranial pressure—severe headache, vomiting, double optic neuritis, slow pulse and respiration, and few or no localising signs. The operation of basal drainage of the arachnoid introduced by Mr. A. C. Morton and Mr. A. Parkin (*Lancet*, July, 1893, p. 21) is admirably adapted for the relief of intracranial pressure in such cases. In two of the present cases the operation relieved dangerous symptoms and probably averted death. In the other case (Case 2) success in relieving the intolerable headache was qualified by increase of the muscular weakness and of the defect of speech; but the ultimate result cannot yet be predicted.

In Case 1 the operation gave evidence of increased intracranial pressure, but no evidence that this was associated with, or produced by, excess of cerebro-spinal fluid. Possibly, however, the fourth ventricle was not reached by the probe, for the trephine opening was placed over the anterior part of the cerebellar hemisphere, from which position the fourth ventricle, unless greatly distended, is much less easy to reach than when the trephine opening is near the median line. Nevertheless, the removal of bone and section of the dura mater caused gradual cessation of the symptoms. Not improbably the case was one of chronic internal hydrocephalus depen-

dent on some blocking of the channels by which the cerebro-spinal fluid is distributed or reabsorbed. On the other hand, such obstruction may have been due to a small basal tumour pressing on the veins of Galen, which may have become quiescent since the operation. The writer has seen a case in which a small tuberculous tumour in that position with hardly any localising symptoms became quiescent under medical treatment for two years. Symptoms then recurred and the child died.

In Case 2 the trephine opening was nearer to the side of the cerebellum than to the posterior middle line. Perhaps for this reason no fluid was struck on passing a director beneath the cerebellum. On the third day a profuse flow of cerebro-spinal fluid appeared suddenly and continued for 4 weeks.

Case 3 resembled a case of acute meningitis either simple or tuberculous. It was watched for 10 days without any sign of amelioration. Although recovery from such symptoms and even from undoubted meningitis is not unknown it is improbable without operation.

See also "REVIEW," Vol. IV., p. 659.

BULLETINS LA SOCIÉTÉ MÉDICALE DES
HOPITAUX, Nov. 29, p. 1230.
**Typhoid Cholecystitis without Typhoid
Fever.**

By MM. F. BEZANCON and A. PHILIBERT.

A woman, aged 28, was in a state of privation. On Sept. 7 she felt very ill and was feverish; on the 8th she had profuse diarrhœa without abdominal pain. She entered hospital on the 11th. She was pale, feeble, and emaciated; the temperature was 104°. There was no diarrhœa, enlarged spleen, tenderness, or

gurgling in the iliac fossa, or rose-spots. She complained of headache but had not the typical typhoid face; her appearance rather suggested tuberculosis, but there were no signs of that disease. Next morning the temperature fell to 100°, but rose to 102·8° in the evening and rigors began; they continued during the whole night. In the morning there was a slight remission. The morning and evening temperatures on this and the following days were respectively 102·5° and 102·8°; 103° and 104·3°; 103·6° and 105°; and 104° and 104·7°. This "staircase-like" temperature chart with morning remissions, in spite of the absence of other symptoms, suggested the diagnosis of typhoid fever, which was confirmed by the diazo-reaction and Widal's test. On the sixth day of the disease a tender tumour was discovered, which was evidently the distended gall-bladder. On the seventh day the temperature, instead of maintaining its level, fell to 103°, and on the eighth to 100°. On the ninth day a large greenish liquid stool was passed, the temperature fell to 99·3°, and the gall-bladder was smaller and less tender. Recovery followed.

This appears to be a case of typhoid infection without the ordinary lesions or symptoms of typhoid fever, in which cholecystitis occurred. Typhoid lesions without typhoid fever have been but rarely observed. M. Kelsch has recorded a case of hæmorrhagic pleurisy due to the typhoid bacillus in a tuberculous subject, M. Fernet a case of serous pleurisy, and M. Guinard a case of appendicitis. Intermediate cases have been recorded. For example, M. Fernet has described a case of typhoid meningitis in which the symptoms were those of meningitis and the intestinal lesions found after death were slight. General typhoid infection (typhoid septicæmia) without intestinal lesions has been observed. Recent researches have

shown that the typhoid bacillus may be simply a saprophyte and occur in the stools of healthy persons. Thus the entrance of the typhoid bacillus into the organism is not sufficient to produce typhoid fever. Predisposing causes, in a great number of cases at any rate, are necessary. According to these causes, according to the state of the viscera, the bacillus determines a general typhoid infection without intestinal lesions (typhoid septicæmia) or, as is the rule, with intestinal lesions (typhoid fever) or exceptionally, a local typhoid affection.

See also "Cystitis of 3 years' duration due to the Typhoid Bacillus." "REVIEW," Vol. III., p. 74.

LANCET, Nov. 30, p. 1467.

Symptoms and Treatment of Movable Kidney.

By HENRY MORRIS, M.A., M.B., F.R.C.S.

The kidney has a certain normal mobility. When exposed in operation it descends with inspiration and ascends with expiration. This slight descent cannot be detected by palpation in every person; in some the organ does not descend sufficiently to enable even its lowest pole to be felt on the deepest inspiration. Every kidney which descends during inspiration so that the smallest part of it can be felt, is not a movable kidney. A kidney must be considered abnormally movable under any of the following conditions:—(1.) When on bimanual palpation the whole kidney descends during deep inspiration below the examiner's fingers. (2.) When the whole or the greater part of the kidney so descends that it can be felt between the fingers of the two hands (3.) When the lower half of the organ so descends and can be so felt. In the cases in

the third group and in some of those in the second group, the organ slips back again in expiration and cannot be *retained* between the fingers; but in many of the cases in the second group and all of those in the first group, the kidney can be retained between the fingers of the two hands, even after full expiration. (4.) There is a group of cases in which the kidney is out of position during natural respiration; and in some extreme cases the organ may even be seen at a glance projecting the abdominal wall, or it can be felt on simply placing a hand upon the abdomen. This group includes the so-called "floating kidney." (5.) The kidney moves in a "cinder-sifting" manner behind the peritoneum, sliding so to speak, upon the plane of the posterior parietes, never "dropping" forwards or inwards, and so is not properly described by the term "nephroptosis." Moreover the kidney sometimes rotates more or less round transverse axes, or round a vertical axis. When round the transverse axis one of the poles of the organ (usually the lower) glides inwards, or swings forwards and inwards, and this displacement may be combined with movements in the vertical or lateral direction. In vertical rotation the convex or outer border advances.

All variations between 1 and 46 per cent. have been given as the frequency of movable kidney in females. Some tables of necropsies yield a proportion less than 1 in 1000. These great discrepancies can be easily explained: Many cases are overlooked because of defective examination. The method of bimanual palpation commonly employed—manipulations below the ribs—generally checks or prevents the movements of the kidney during respiration by keeping the kidney back in the renal fossa. (2.) Those who deny that the kidney can be detected by palpation during normal or even



deep respiratory movements, unless it is abnormally mobile, include in the category of movable kidney every case in which during deep inspiration only the lower extremity of the kidney comes within reach of the fingers. (3.) Physicians at health resorts and thermal hospitals, the greater number of whose patients are dyspeptic, neurotic, or hysterical, if they systematically employ methods of palpation to detect abdominal ptoses, find a greater percentage of movable kidneys than others.

HOW TO ASCERTAIN WHETHER THE KIDNEY IS MOVABLE OR NOT.

The writer's method of examination is the following: The patient lies on the back with the shoulders slightly raised by a firm pillow, the spine resting flat upon the sofa or mattress, the lower limbs slightly flexed, and the side which is being examined close to the edge of the couch. The surgeon places the fingers of one hand behind and upon, and also just below, the last two ribs, and the fingers of the other hand flat upon the front of the abdomen, just below the costal margin near the outer border of the rectus muscle. (Fig.) He should be on the same side of the patient as the kidney which he examines and should sit or kneel at the bedside, so as to have his lowermost forearm

as nearly as possible level with the patient's body. When examining the right kidney the left hand should be on the loin and the right in front; and *vice versa* when examining the left. With the hand on the loin the lumbar parietes should be gently but firmly pressed forwards and sustained so; then the fingers of the hand in front should gently and steadily depress the anterior abdominal walls upwards, backwards, and outwards. The kidney, if enlarged or displaced at all, will now be felt between the two hands, and even if not enlarged the lower pole will, in some persons, be detected during natural respiration. If not, the patient should be directed to take a long and deep inspiration, and suddenly, but without effort, to allow the air to escape from his lungs; in other words he should make a long-drawn "sigh." The hand behind still maintains forward pressure on the loin, and the hand in front quickly follows the receding abdominal wall as it becomes relaxed in expiration. Thus the kidney, which otherwise cannot normally be felt, can often be seized between the fingers of the two hands before it has time to regain its normal position. This method becomes even more efficacious if the patient takes a second and a third "sigh" whilst the surgeon maintains and increases the deep pressure made after the

first and second. Palpation is sometimes assisted by raising the patient's shoulders so that he assumes the semi-recumbent attitude.

It is sometimes advantageous to place the patient in the knee-elbow or in the upright position. As a rule, however, the writer finds it best to make the patient roll over on the opposite side and then to employ bimanual palpation as just described. When the lateral position is assumed and a deep inspiration taken, a movable kidney which persistently declines to become evident will frequently fall at once towards the front of the vertebral column, below the costal margin.

Glénard's method consists in compressing the lower part of the thorax by placing the fingers of one hand on the eleventh rib posteriorly and the thumb of the same hand on the level of and below the extremity of the ninth rib, at the same time crowding back the abdominal walls with the other hand placed on the umbilical region. By compressing the intervening structure between the two hands the kidney as it descends during a deep inspiration is detected by the thumb. He describes the kidney as feeling like a vague indefinite mass as it descends during a deep inspiration.

Israel's method consists in making the patient lie on the side opposite to that to be examined, whilst the surgeon stands on the left side of the couch to examine the right kidney, and *vice versa*. In examining the right kidney he places the fingers of the left hand upon the right lumbar region and the right hand upon the anterior abdominal wall so that the tips of the index and middle fingers are two finger-breadths below the junction of the ninth and tenth costal cartilages. Then, whilst the left hand is supporting the lumbar region, the patient takes a deep inspiration and the kidney is felt at the end of this act.

By the writer's method the kidney is felt best at the end of the inspiration and at the beginning of expiration—as soon as the muscles of the abdominal wall relax. Glénard claims for his method that at the beginning of and throughout inspiration he feels the kidney. But a result of making a deep inspiration is to push forwards and harden the muscles of the anterior abdominal walls, and this prevents deep indentation of the parietes with the hand in front. It is only in very thin persons, and in those with very flaccid abdominal muscles, or in extreme cases of nephroptosis, that the kidney can be felt to descend during the whole of inspiration. By Israel's method the kidney is detected at the end of inspiration.

SIGNS.—There may be no signs owing to the thick-set conformation or the obesity of the patient, or, in a slight person, to the elongated shape of the thorax, to the high position of the kidney, or to the movements of the kidney being of the "cinder-sifting" kind (Group 5). In stout persons there may be a wide range of movement, and yet the kidney may be beyond the reach of palpation. But in some cases in which there are no physical signs the symptoms are very acute. In some cases of great mobility in which the kidney can be easily detected it cannot be felt at times. The writer never declares that a kidney is not movable because on a single examination, however careful, he cannot feel it move. He has sometimes reduced a floating kidney and nothing that he or the patient could do at the time of the consultation could bring it again into evidence, though the next day it was floating as freely as ever. If the mobility is considerable the kidney may fall below the margin of the ribs towards the umbilicus or the pelvis when the sitting or erect posture is assumed, or it may roll towards

the median line when the body is inclined to the opposite side, and be easily pushed back into the loin when the recumbent position is resumed. In rare cases the patient, by some particular movement or posture which she has discovered by accident, can at will bring her movable kidney out of the hypochondrium into the umbilical, lumbar, or iliac region. Except in the "cinder-sifting" form, one can make out by palpation, not only if the kidney moves too freely, but also if it rotates. The direction of the long axis of the organ is frequently oblique from above downwards and inwards, the hilum being turned upwards and inwards. More rarely the hilum is turned downwards. When the patient is rolled over on to the sound side the convex border of the kidney may be felt to tilt forwards and to incline inwards towards the front of the spine. When the kidney is ectopic, occupying the lumbar or iliac region—whether it be only of normal size or enlarged from disease—it is generally beyond the influence of the diaphragm and does not move with respiratory movements, though it may be freely pushed from place to place. Percussion over the kidney usually gives a tympanitic or muffled tympanitic note. Epigastric aortic pulsation and congested enlargement of the movable kidney are very commonly present. During the catamenial period a movable kidney may enlarge and be mistaken for a renal growth.

SYMPTOMS.—The kidney may be distinctly movable without any symptoms being produced. The usual symptoms are (1) pain; (2) digestive troubles; and (3) neurasthenia and hysteria. These may occur separately or together. (4) Rarely there is some change in the urine or in the functions of the urinary organs. (5) More rarely still, there is some extreme complication due to compression or

dragging, such as intestinal obstruction, jaundice, or great gastric dilatation.

The pain is sometimes described as merely a constant ache in the back and down the affected side of the abdomen, or as a sensation of dragging or weight in the loins and on the affected side of the abdomen, or pain below the shoulders and at the back; or the patient may complain of stiffness of the back and cramping pains in the abdomen. Some patients experience an occasional uncomfortable sense of something moving in the side, which when marked has been compared to foetal movements. The pain may disappear on lying down, and be increased by walking and standing; in other cases after the recumbent position is resumed it gradually increases and remains severe even for hours. Neuralgic pains may occur in the course of the great nerve trunks on the affected side. There are sometimes renal paroxysms, characterised by intense abdominal pain, hardening of the abdominal wall uniformly or only on the affected side, faintness, giddiness, and symptoms of collapse. During these paroxysms the kidney is extremely tender and can often be felt enlarged from congestion or renal retention of urine. The urine becomes scanty and may contain albumin, casts, or blood; but when the attack passes off it becomes normal or there may be polyuria. These symptoms are probably due to displacement and rotation of the kidney with torsion of its pedicle, the organ becoming intensely swollen and congested. Acute hydronephrosis may be produced and a tumour thus formed.

Disturbances of the digestive system are in some patients prominent. Vomiting, often frequent and severe, sometimes preceded by a burning sensation in the epigastrium, with symptoms of gastritis or actual dilatation of the stomach, occurs. In the large intestine

the most common condition is obstinate constipation, which may in some cases amount to temporary obstruction; occasionally there is irregularity of the bowels or diarrhœa. These symptoms are probably produced either by actual pressure or by the dragging of the misplaced kidney upon the intestine. Folds of peritoneum have been observed passing from the kidney to the duodenum in such a way that when they are pulled upon the lumen of the duodenum is narrowed or even occluded. The gastric symptoms are liable to acute exacerbations or "crises." They consist of violent attacks of colic with nausea and vomiting, and may be accompanied by abdominal distension and tenderness, and sometimes by a rise of temperature and signs of collapse. Transient attacks of jaundice are said not to be infrequent. (See "REVIEW," Vol. III., pp. 88, 89, and 224.) They probably depend upon the dragging of folds of peritoneum on the duodenum as above described, for the idea that there is ever direct pressure of the kidney upon the bile-passages is not borne out by anatomical investigation. Symptoms of chronic appendicitis are considered by Edebohls a frequent complication of movable right kidney. He explains this on the supposition that the organ produces indirect pressure upon the superior mesenteric vessels, which become compressed between the pancreas and the bodies of the vertebræ, chronic congestion of the appendix and colon thus being produced.

Movable kidney may lead to hysteria in a female who had previously shown no neurotic tendency, and this may be completely cured by nephropexy. But some of the most painful cases occur in healthy women, physically and mentally active, who are completely invalidated by the pain and

digestive troubles. Though belts, diet, and recumbency fail, fixation by operation succeeds. In most uncomplicated cases the urine is healthy; in many cases there is some albuminuria from time to time, but if the urine is habitually albuminous this is due to some pre-existing or co-existing disease. There may be frequency of micturition and polyuria, pyuria, or hæmaturia.

PATHOLOGICAL EFFECTS.—The most common effect is general impairment of health. Languor, debility, loss of flesh, vertigo, constipation, hypochondriasis, great restlessness, great anxiety, perversions of sensations or of the special senses, hysteria, and many other neurotic conditions are ordinary consequences. The most frequent effect upon the kidney is hydronephrosis, intermittent or persistent. When distended a hydronephrotic organ may give rise to an abdominal tumour, but in other cases the kidney, though converted more or less into a mere sac, is small and even when tightly distended cannot be detected by palpation.

TREATMENT.—In many cases the symptoms are so slight that no treatment is requisite. When symptoms occur in spite of the avoidance of active exercise, when pain, aching, and a wearying sense of dragging weight or of great lassitude are caused by ordinary standing and walking, or when pain occurs even during rest, nephropexy is called for. Various forms of trusses and bandages have been devised and have in some cases given partial relief. But though some patients are rendered more or less comfortable they are not cured. Moreover, in Groups 1, 2, and 4, the pads and bandages are not free from the risk of doing more harm than good unless care is taken not to apply them before the kidney is replaced, or if the kidney

descends after the pad has been adjusted. Much depends upon the care with which the belt is applied. It is chiefly in the rare cases in which movable kidney is associated with enteroptosis that belts are of use, in these the best is one shaped so as to fit well above the hypogastrium without any pad, to support the abdomen generally. Some women find a belt so uncomfortable that they refuse to wear it. The writer attaches next to no value to rest in the recumbent position. In several instances in which he has operated with gratifying results the patients had kept the recumbent position for 6 or 9 months without improvement.

An operation should be advised when the symptoms are severe and not relieved by rest, mechanical appliances, and medicinal and dietetic treatment; when mechanical appliances cannot be borne or seem to increase rather than mitigate the symptoms; and when the patient cannot without suffering take gentle exercise or even sit erect for long. When in spite of palliative treatment paroxysms of nephritic colic, fainting, sickness, vomiting, and pain radiating in the branches of the lumbar plexus occur frequently, the only possibility of relief is by operation. The only justifiable operation is nephropexy. Nephrectomy is no longer admissible.

When movable kidney is associated with enteroptosis no operation should be performed on the kidney unless it is evident that the more serious symptoms are due to the mobile kidney alone, and not until after the trial of a well-fitting abdominal support and careful dietetic and medicinal treatment of the gastric and intestinal disorders. Should these means fail and the kidney evidently be most at fault, nephropexy should be tried, and followed by the wearing of an abdominal belt. When a movable kidney is complicated by a movable

liver, or when both kidneys move, the same rule should be followed as in general enteroptosis. If both kidneys are movable and give trouble they should be fixed one after the other at an interval of a week, so that convalescence from both operations may be simultaneous. When the movable kidney occurs in a hysterical or neurasthenic patient all palliative means should be tried before resorting to operation, and the uncertainty of the result from operation should be declared. In about half of these cases a cure may be hoped for by nephropexy. For uncomplicated movable or floating kidney, in which the principal symptoms are pain and gastro-intestinal troubles, the operation may be confidently advised without previous trial of belts or of rest. When renal crises are a feature nephropexy should be strongly urged because of the impossibility of keeping the kidney in its place by a belt, and because of the constant risk of hydronephrosis and recurring pain, even if the renal crises can be kept under control.

WIEN. KLIN. WOCH., June 6, p. 559.
Suppuration of Bronchial Glands as the Source of "Cryptogenetic" Septicæmia and "Idiopathic" Cerebral Abscess.
 By DR. F. SCHLAGENHAUFER.

In 1889 Ferrari published a case of pyæmia, which followed phlebitis and thrombosis of a pulmonary vein, which in turn depended on the rupture into it of an abscess of a bronchial gland, communicating with the œsophagus (*Wien. Klin. Woch.*, 1899). Œconomides, in 1882, recorded a somewhat similar case: a cerebral abscess followed suppuration in a bronchial gland, which communicated by a

sinus with the œsophagus (*Inaug. Dissertat.*, Basle). The writer now reports 3 almost identical cases:—

CASE 1.—A woman, aged 21, of healthy parentage, but never strong, after eating horse-flesh on Jan. 6, was suddenly seized with vomiting and diarrhœa. The following day she was admitted to hospital almost unconscious. She was pale and had dyspnœa, a frequent small pulse, retracted abdomen, violent headache, and a temperature varying from 100.4° to 102.2° . The urine contained albumin and gave the diazo-reaction. The head became retracted and death occurred on Feb. 13. Post mortem the cerebrum, cerebellum, and pons, and, especially, the central ganglia were found riddled with abscesses. On washing away the pus some sieve-like holes were left. There was pus in the lateral and third ventricles and at the base of the brain. At the apex of the right lung was a tuberculous mass. The bronchi contained pus, and the bronchial glands were enlarged. In one of these, just behind the bifurcation of the trachea, was an abscess of the size of a cherry stone containing greenish pus. It was not adherent to the bronchus, and the œsophagus was normal. The spleen was enlarged and contained wedge-shaped areas of suppuration. There were scattered tubercles in the left kidney, liver, stomach, intestine, and bronchial glands. The pus in the brain, bronchial glands, and spleen contained streptococci in pure culture.

CASE 2.—A well-nourished woman, aged 23, had been ill for 4 days, but the exact history was unknown. Death occurred on Nov. 25. Post mortem beneath two greenish-grey spots on the meninges of the right hemisphere abscesses were found. There was pus at the base of the brain, especially on the right side. The fourth ventricle contained pus from the

irruption of a cerebellar abscess. The right lung was adherent to the parietal pleura, the left lung was healthy. In the trachea at the entrance to the right bronchus was a gangrenous patch, from which a small perforation led into a cavity filled with thick pus. This abscess almost surrounded the trachea, and behind was adherent to the œsophagus, with the lumen of which it communicated by a small opening. Near were two small œsophageal traction-diverticula, due to adhesions. The spleen was enlarged. The pus in the abscesses contained the staphylococcus aureus and streptococcus. The walls of the abscess in the bronchial gland between the trachea and œsophagus contained old tubercles. The brain was crowded with cocci.

CASE 3.—A well-nourished girl, aged 17, became ill on Dec. 26, and was confined to bed on Dec. 31. There were vomiting and violent occipital headache. She was admitted to hospital on Jan. 3, unconscious, and died $1\frac{1}{2}$ hours later. There were pyrexia and retraction of the head. Post mortem the convolutions were flattened. The right central convolution was discoloured and fluctuated; there were 3 abscesses in the right hemisphere, varying from the size of a cherry to that of an apple, and 1 in the right lower temporal convolution of the size of a walnut. These contained greenish cheesy pus. A fluctuating swollen gland of the size of a walnut was situated on the right bronchus. At the level of the bifurcation of the trachea were 2 small and 1 larger traction-diverticula; a probe introduced into the last entered the enlarged bronchial gland, which was converted into an abscess and contained greenish, cheesy pus. The tracheal glands were tuberculous, caseating, and anthracotic. The lungs were healthy; the spleen was enlarged. The pus contained staphylococci and streptococci.

Thus these 3 young women in the midst of apparent health were cut off by purulent meningitis after an illness of 4 to 7 days. In each case a suppurating lymphatic gland under the bifurcation of the trachea near the right bronchus was the origin of the infection. In the first case no communication between the gland and neighbouring organs appeared to exist, in the second the abscess communicated with both the œsophagus and trachea, and in the third with the œsophagus alone. In the first case the gland was possibly infected from the œsophagus, since the abscess was close to it; in the second, from the bronchus, since the abscess was localised on that side of the gland, and in the third, doubtless through the œsophageal diverticulum. In the cases of Ferrari and Economides the lymphatic glands were infected through traction-diverticula of the œsophagus. In the 3 present cases the primary cause of adhesion between the gland and bronchi or œsophagus was latent tuberculosis, and in all 5 cases multiple cerebral abscesses occurred.

In all cases of fatal septicæmia or cerebral abscess of doubtful origin the bronchial glands should be carefully examined.

LANCET, Nov. 30, p. 1471.

Perigastric Adhesions from Gastric Ulcer.

By W. HALE WHITE, M.D.

CASE 1.—A man, aged 30, was seen in May, 1900. In 1894 and the early part of 1897 he was treated for dyspepsia. In Dec., 1897, he was taken ill with sickness, slight hæmatemesis, and severe abdominal pain. He kept his bed some time and was under treatment for 4 months. During the next 12 months he

was better. In the spring of 1899 he lost ground, but not seriously. During the winter of 1899-1900 he suffered continuously from abdominal pain; early in Feb., 1900, this was severe and was accompanied by sickness and hæmatemesis. The pain diminished but the sickness continued; he became very anæmic and lost 20 lb. in 6 weeks.

He was extremely wasted, looked very ill, and was in much pain. The stomach had a capacity of 3 quarts. Dilatation of the stomach secondary to ulcer at the pylorus was diagnosed and laparotomy was performed. The pylorus was attached to the structures behind it and to the liver by adhesions evidently the result of gastric ulcer. They kinked the stomach so as to obstruct the flow through the pylorus. They were divided and the kinking disappeared. Recovery was uninterrupted. In Dec. he was in good condition and vigorous, and said that he had enjoyed life during the previous 6 months more than he had for 6 years. Probably at the time of operation the ulcer was still open, for hæmorrhage had occurred shortly before. As this ceased after operation the adhesions may have kept the ulcer open.

CASE 2.—A woman, aged 45, had paroxysmal pain in the back and abdomen for several years, which had been much worse during the past 3 months. The pain kept her awake at night. The taking of food sometimes gave relief. During the attacks bilious vomiting occasionally occurred. Drugs were useless. There was great tenderness mid-way between the umbilicus and ensiform cartilage. Laparotomy was performed and several adhesions were found between the liver and stomach, which caused kinking and obstruction near the pylorus. These were divided and the kinking and obstruction were relieved. During the

next few days she continued very restless and morphia was given. On the third day after the operation while lying in bed she suddenly became collapsed and died. At the necropsy a healed ulcer was found near the pylorus, which evidently caused the adhesions. There were also adhesions at the back of the stomach in connection with the ulcer, which had not been seen at the operation. The cause of death apparently was extreme fatty degeneration of the heart.

CASE 3.—A woman, aged 28, was admitted to Guy's Hospital on March 4, 1901. Her illness began 5 years before with pain. This had gradually increased, and had often been so severe that she had to keep her bed. It occurred independently of meals. She retched a good deal but was not sick unless she put her finger in her throat, which she sometimes did to relieve the pain. The vomit was sometimes streaked with blood. She was very constipated. She had lost weight of late, but she had taken little food owing to the severity of the pain. She had been in two or three hospitals, but had derived no benefit from treatment.

The epigastrium between the middle line and the outer part of the right rectus was very tender. Careful palpation gave the impression that there was something abnormal in the abdomen, such as peritoneal adhesions. The patient was kept under observation for 10 days. She often rolled about and cried with agony. The only remedy that controlled the pain was frequent morphine injections. Adhesions in connexion with an old ulcer of the stomach were diagnosed, and laparotomy was performed. A band about half-an-inch wide and 2 inches long stretched from an ulcer, about the size of a threepenny-piece, at the pyloric end of the stomach to the intestines. Any movement of the intestines

would drag on it considerably. It was divided and the wound sewn up. Recovery was uninterrupted. The patient had no pain after the operation, and a month later was in excellent health.

CASE 4.—A married woman, aged 30, was admitted to Guy's Hospital on April 2, 1901. Her illness began 13 years before with pain in the stomach. At first it was felt only after meals, then it gradually grew worse and constant. Some days after the onset she had a severe attack of vomiting and brought up much bright red blood. After this she remained in bed for 6 weeks, subsisting mainly on nutrient enemata, as but rarely could she retain anything in her stomach. Since that time she had lived almost entirely on liquids. She had never been longer than a few weeks free from pain and vomiting, accompanied by hæmatemesis. During the last few months the pain had been more severe. Only morphine injections relieved the pain.

She was thin and wasted. The abdomen was tender and hyperæsthetic over an area about an inch square situated a little to the right of the middle line, and about $1\frac{1}{2}$ in. below the costal margin. Under careful feeding she gained 2 lb., but the symptoms did not improve. Accordingly, the abdomen was opened on April 29. A few slight adhesions binding the pylorus to the liver were divided. The pylorus was much constricted. It was therefore divided longitudinally and sewn up transversely. After the operation the pain, vomiting, and hæmatemesis ceased. By May 20 she was taking ordinary food and had gained 11 lb. since the operation. The symptoms were probably due more to direct constriction of the pylorus than to indirect constriction by adhesions, for these were slight. After she went home the pain and sickness returned severely. On re-admission it

was found that she was occasionally a little sick and sometimes had pain, but she was much better than before the operation, and took ordinary food. Evidently much functional disorder was superadded to the organic trouble.

CASE 5.—A woman, aged 39, was admitted to Guy's Hospital on April 14, 1900. She had had chronic indigestion for 4 or 5 years; vomiting and pain began 2 years ago. In Aug., 1889, she vomited blood and was laid up for 6 weeks. She had lately suffered much from epigastric pain, and had been getting worse. On April 7 the vomiting began again. It increased in severity to the 10th, when she brought up a quarter-of-a-pint of dark blood. For 3 days she vomited blood nearly every 3 hours.

She was very weak, anæmic, and emaciated. She lay flat on her back and had much epigastric pain. She had a severe attack of tetany. The stomach was considerably dilated. Lavage produced no improvement therefore laparotomy was performed on the 22nd. The stomach seemed constricted about two-thirds of its length from the cardiac end by an ulcer running round it. A band ran from the constriction to the gall-bladder which was much deformed. This was divided between silk ligatures. The constriction in the stomach was divided transversely across the scar and stitched up in the line of the scar, thus widening the stricture. Repeated hæmatemesis followed and she lost ground. The abdomen was reopened on the 25th. The incision in the stomach had healed well; adhesions were found on the posterior surface of the stomach binding it to the liver, pancreas, and other structures. The operation occupied 2½ hours. The patient was much collapsed and sank 4 days after the operation.

The necropsy showed the cardiac end of the stomach to be enormously dilated. There

were 2 ulcers of the stomach, one of which was successfully dealt with at the first operation, and another larger ulcer 3½ in. from the pylorus, which, like the first ulcer, caused much constriction and caused the stomach to adhere to the liver, pancreas, and structures at the back of the abdomen.

Perigastric adhesions from gastric ulcer are not uncommon, for of the gastric ulcers found in the post-mortem room about 45 per cent. have formed adhesions to some neighbouring organs. Severe pain is the prominent symptom. In two of the cases the patients were fast becoming addicted to morphia. The pain is usually situated in the upper abdomen, and often lasts for years. Patients suffering from dyspepsia or from uncomplicated gastric ulcer often relapse, but in the intervals between the attacks they are free from pain. But the pain and other symptoms of adhesions are more or less constant and of long duration—points of great value in the diagnosis. The other condition most likely to cause such symptoms is carcinoma. The differential diagnosis may be difficult. The following are important differences: Perigastric adhesions often lead to no loss of flesh, at any rate the wasting is less than in carcinoma; they rarely lead to death, and they occur in younger people; in carcinoma hydrochloric acid is usually absent. The writer's patients were usually sure that the taking of a meal did not increase the pain, nor is this surprising, for the pain is no doubt due to the dragging of the adhesions on the stomach, and therefore may be less when the stomach is dilated, for then the gastric attachment of the adhesion will be brought nearer to its other end. But the pain is often paroxysmal, even though it is constant; this no doubt is due to peristalsis dragging on the adhesions. It is interesting that in Case 3, in which the adhesion passed from the stomach to the

intestine, the paroxysms were particularly frequent and particularly severe, probably because peristaltic contractions could drag on either end. Probably some of the cases of abdominal pain commonly ascribed to "gastralgia," "gastrodynia," "hysteria," or "hypochondriasis," are really due to adhesions. In some of the cases there was local tenderness over the site of the adhesions and it was sometimes possible to obtain by palpation a distinct feeling as if there were some matting of organs.

TREATMENT.—Relief is possible only by operation. If it is decided that an operation is necessary, do not spend time in trying the effect of rectal feeding, for patients nearly always lose ground during rectal feeding and therefore become worse subjects for what may be a long and tedious operation.

ST. PETERSBURG MED. WOCH., No. 44,
1901, p. 481.

Acromegaly combined with Myxœdema.
By DR. OSCAR BURCHARD.

The pituitary body has intimate relations with the thyroid gland. In myxœdema, after the function of the thyroid gland has been suppressed the pituitary body hypertrophies; in acromegaly, in which the pituitary body hypertrophies, the thyroid gland is constantly diseased. It is therefore natural that the symptoms of the two diseases should have points of resemblance, and that cases of acromegaly should have been published as myxœdema, and cases of myxœdema and of sporadic cretinism as acromegaly.

A woman, aged 23, of healthy parentage, had always had good health till her eighteenth year. Menstruation began at 15 years of age.

About 18 the nose and lips began to swell and the hands and feet felt numb and soon began steadily to enlarge. Memory, intelligence, hearing, and vision deteriorated; she became apathetic and seldom smiled. The movements of the huge hands became clumsy, and there were intense and almost constant headache, frequent perspirations, and increased lacrymation. Menstruation had ceased for 2 years, but for about 6 days almost every month the eyelids and arms became œdematous. For some months the left foot had been painful and caused her to limp. The height was just over 5 ft. $\frac{1}{2}$ in., the circumference of the head at the level of the eyebrows was 22.44 in., which was considerable for the height. The head was not markedly ovoid nor did the lower jaw and alveolar process project beyond the upper. The nose and lips, especially the upper lip, were voluminous, the buccal mucous membrane was loose and thick, and the tongue broad ($2\frac{3}{4}$ in.) and cyanotic. The hair was abundant. There was upward strabismus of the right eye from paralysis of the inferior rectus muscle, and the pupils on both sides reacted sluggishly. There was a central scotoma for colours and commencing right optic atrophy. Speech was slow and laboured, and attempts to speak fast led to stammering. The voice, formerly high and clear, was deep and rough. The neck was thick, and the thyroid gland palpable. The sternal ends of the clavicle were thickened and prominent, the sternum was wide and deep. The circumference of the thorax just above the mammæ measured 3 ft. 2 in. or nearly 8 in. more than half the total height. The upper thoracic vertebræ were slightly prominent, but there was no marked lordosis. The hands were clumsy, wide, and massive—the *type en large*. The enlargement affected the soft parts more than the bones, but the

Röntgen rays have proved this to be the rule in acromegaly. The metacarpal bones were normal, but the phalanges were wide and thickened. The skin of the hands was thickened but loose, so that it could be pinched up in large folds, and was neither dry nor desquamating; the lines of the palm were deep. The nails were wide and short, but not deformed. There was acroparæsthesia of the forearms and hands—sensations of “pins and needles” and deadness. There were teleangiectases on the back of the upper arm. There was also acroparæsthesia of the legs and feet, the latter being wide, thick, and enlarged. The right foot resembled the hands in character, the left was larger and painful when the tarsal joints were used. The skin over it could not be pinched up, and appeared œdematous, but did not pit; the sole was livid blue. The skiagraph of the bones of the right foot was clear and defined, that of the left blurred. The presence of effusions usually produces blurring, which in this case was probably due to the myxœdematous condition of the skin. There were varices on the legs, and warts on the left foot. The tendon reflexes were exaggerated. The pulse was 70, the temperature subnormal, and the urine normal. The patient was well nourished, although she was said to have had anorexia for 2 years.

Thyroidin tablets were given at the beginning of Aug. At the end of the month the myxœdematous condition of the skin of the left foot had almost disappeared; the skin could be easily pinched up in folds, the livid discolouration of the sole had faded, and the pain and limping had disappeared. The other symptoms were altogether unaltered.

The appearance, the shape of the nose and lips, the broad tongue, the uniform enlargement of the hands and feet without deformity, the deep voice, the condition of the skin, the

cerebral and ocular symptoms, the amenorrhœa, and the acroparæsthesia pointed at once to acromegaly. In myxœdema cerebral and ocular symptoms, enlargement of the extremities, a thick tongue, deep voice with deliberate speech, headache, and irregular menstruation also occur. But the cutaneous changes in myxœdema are quite characteristic: the skin is inelastic, hard, desquamating, livid or cyanotic, and œdematous, though there is no pitting. In this case the skin, except that of the left foot, was moist, was often covered with sweat, did not desquamate, could be pinched up in folds, and was of a normal colour. The free diaphoresis, increased lacrymation, and condition of the tendon reflexes also excluded myxœdema. Again, the hypertrophy of the hypophysis in myxœdema is never sufficient to cause oculomotor paralysis, though there may be atrophy of the optic disc, and in the enlargement of the hands in myxœdema the bones never participate. Lastly thyroid tablets had no effect except on the left foot. In this, however, the changes were partially myxœdematous, as the results of treatment proved. The presence of warts has been noted in several cases of acromegaly. Anorexia is exceptional, polyphagia more common. The periodical swelling of the arms and eyelids was either identical with that which may occur in syringomyelia, gliosis, and other serious nervous diseases, or was a phenomenon replacing menstruation. It was not known whether pitting could be obtained.

In the diagnosis the only confusion possible was with pulmonary hypertrophic osteoarthropathy, and acro-asphyxia hypertrophica, a condition related both to erythromelalgia and Raynaud's disease. The former was excluded by the absence of deformity of the hands, of drum stick enlargement of the fingers, and of swelling of the forearms, on the one hand,

and by the presence of changes in the soft parts of the face and general symptoms, on the other. In the latter there may be acroparæsthesia, hyperidrosis and other secretory disturbances, vaso-motor changes with livid discolouration and trophic lesions resulting in hypertrophy. In this case it was excluded by the nature of the cerebral symptoms, the broad tongue, the early menopause, and the altered voice. The condition was due, therefore, to acromegaly—the *forme frutse*, since there was no hypertrophy of the lower jaw—combined with partial myxœdema.

For the presence of symptoms of myxœdema with a tumour of the hypophysis compare "REVIEW," p. 39.

BULLETINS DE LA SOCIÉTÉ MÉDICALE DES
HOPITAUX, Oct. 18, p. 1065.

**Symmetrical Gangrene following
Pneumonia.**

By M. HENRI DUFOR.

A woman, aged 58, some days after recovery from double pneumonia had generalised polymorphous erythema. Gangrenous patches appeared on the fingers, toes, tip of the nose, and lobules of the ears. They were not preceded by "local syncope or asphyxia," but almost from the first vesicles filled with

turbid fluid appeared. Suppuration followed. There were pains in the fingers, which were not paroxysmal. Pulsation never ceased in the peripheral arteries. Bacteriological examination of the blood was negative. The patient had well-marked albuminuria and died from "purulent infection."

NECROPSY. — The lungs and heart were healthy. There was pus in the left knee-joint. The peripheral nerves were normal. Portions of the integument of the most affected finger—the left index—were removed and examined. The tissue was crowded with leucocytes; the arterioles were not obliterated, but the venules were in a state of phlebitis.

The writer's explanation of the gangrene is that it resulted from the action of toxins on the cells of the peripheral parts, which were the most vulnerable in consequence of the circulatory difficulty at the greatest distance from the heart. Whenever the circulation is embarrassed the extremities are in danger of gangrene, as is shown by the cases of pericarditis reported by Widal and Leveillé in which "local asphyxia" occurred. (*Thèse de Paris*, 1900-01.) The vulnerability of the most peripheral parts has been shown experimentally by M. Phisalix, who placed a microbial culture contained in a collodion capsule in the peritoneal cavity of a guinea-pig and produced symmetrical gangrene of the extremities (including the nose and ears).

MEDICINE.

Acute Dilatation of the Stomach.—By Charles R. Box, M.D., F.R.C.S., and Cuthbert S. Wallace, F.R.C.S. (*Lancet*, Nov. 9, p. 1259).

CASE 1. LACERATED WOUND OF THE KNEE-JOINT; CELLULITIS OF THE LEG AND THIGH; AMPUTATION; ACUTE DILATATION OF THE STOMACH AND DUODENUM.—A man, aged 29, had a lacerated wound of the left knee, opening the joint. The injury was the result of a crush between the footboard of a train and the platform. Much grit was ground into the wound. The wound gave considerable trouble, pockets of pus forming. Arthrectomy was performed. On account of the severe and repeated hæmorrhage, amputation of the thigh became necessary about a month after the accident. The patient was extremely collapsed and hardly responded to intravenous infusion of saline fluid, or to brandy or strychnine injections. The bowels were not confined but there was no marked diarrhœa.

Necropsy was made 17½ hours after death. The stomach was dilated and very prominent. Its lower border extended well below the umbilicus. The dilatation extended to the first part of the duodenum—where the duodenum was in front of the lumbar spine. The stomach contained a little fluid and some odourless gas.

CASE 2. PLEURO-PNEUMONIA WITH SEVERE TOXIC SYMPTOMS; ACUTE DILATATION OF THE STOMACH AND DUODENUM.—A man, aged 24, previously healthy, shivered and felt pain in his left side which caused a "catch" in his breath. On the third day he was admitted to St. Thomas's hospital with a temperature of 104°. Over the lower lobe of the left lung percussion resonance and vocal fremitus were diminished, the breath sounds were feeble, and a few crepitant sounds

were heard. The abdomen was not distended. On the fourth day the temperature suddenly fell to 96°, but it rose again the same evening to 102°, and steadily rose from that time until death when it reached 104°. A patch of faint tubular breathing developed in the left scapular region and rhonchi and moist sounds were present over the other parts of the lungs. Profuse and uncontrollable diarrhœa set in, the bowels acting 15 times on the eighth, 5 times on the ninth, and 11 times on the tenth day. He was sleepless, complained of severe epigastric pain, and commenced to vomit. He was so collapsed that saline fluid was injected subcutaneously and brandy and strychnine were given. Death occurred on the twelfth day.

NECROPSY.—The body was emaciated, the trachea and bronchi contained much tenacious mucus, the bronchial glands were swollen, and the left lung was completely pneumonic, the lower lobe being grey and œdematous whilst the upper was still red. The visceral pleura was covered with a thick fibrinous pellicle. The lower lobe of the right lung showed patchy grey hepatisation; the other lobes were congested and œdematous. There was a fibrinous pellicle on the pleural surface of the lower lobe of this side. The stomach was greatly distended. It lay with its long axis directed downwards and to the right. The lowest part was within a few inches of the pylorus and reached the level of a line joining the anterior superior iliac spines. The lesser curvature, after emerging from beneath the liver, ran almost vertically downwards to a point on the right of the mid-line on a level with the umbilicus, then becoming sharply recurved ascended to the pylorus. The distention

involved also the whole of the duodenum, stopping short near the jejunum. The contents of the stomach were partly fluid and partly gaseous. The intestines below the duodenum were partially collapsed.

Early diagnosis is important. Treatment is apparently futile when the distension becomes extreme. The recorded cases show that the recognition of the condition is by no means easy. It has been mistaken for (1) intestinal obstruction, (2) perforative peritonitis, (3) perforation of bowel with encysted abscess, (4) pancreatic cyst, (5) uræmia, and (6) post-anæsthetic vomiting. Of obstruction it doubtless is a form, but of obstruction high up, with obtrusive abdominal signs of gastric dilatation. However, diarrhœa is present and severe in some cases. The intense abdominal pain which is usually present, the vomiting, the increasing abdominal distension, and the marked collapse closely resemble general peritonitis. The position of the percussion dulness in the lower abdomen and right iliac region on a superficial examination may appear to confirm this suspicion. The enormously distended stomach has even been mistaken for an encysted abscess. The incessant vomiting, partial suppression of urine, occasional albuminuria, somnolent delirium which may mark the approaching termination, and "collapse" temperature which is sometimes present, may give rise to suspicions of uræmia. In cases occurring after operations there is danger of attributing the vomiting to the anæsthetic and the collapse to the operation. Careful examination of the abdomen is the only safeguard. In all cases the readiest way to a diagnosis lies in a knowledge of the conditions under which acute dilatation of the stomach is likely to occur and in a careful examination of the abdomen with an attempt to elicit the succession-splash. The dilatation may not at the onset of symptoms assume the extreme degree seen later and even a day or two may elapse before dilatation is recognised. The course of the temperature is variable and is

largely influenced by the accompanying disease; a "collapse" temperature is not necessarily present.

The treatment consists in strychnine injection, stomach lavage, rectal feeding, and intravenous or rectal saline infusion. As to an attempt to remedy the obstruction by the postural method the writers have not been able to satisfy themselves that it is successful in the cadaver, even with the abdomen freely opened, so that the stomach might fall forwards easily. It appears rational, however, to adopt the right-sided or prone position after syphonage. It might be advisable also to try the effect of atropine injection, which is believed to be useful in the cardio-gastric crises of diphtheria. Should operation be determined upon the ideal procedure appears to be gastro-jejunostomy, as proposed by Mayo Robson.

In a previous paper (*Transact. Clinical Soc.*, 1898) the writers drew attention to the fact that the dilatation in 4 out of 16 cases involved the duodenum. In both the present cases the duodenum was dilated, in one a part and in the other practically the whole of the duodenum being involved. In one of the cases lately recorded by Dr. Campbell Thomson a similar condition was noted ("REVIEW," Vol. IV., p. 716). Hence the dilatation cannot be due to pyloric spasm. The presence of bile in the stomach contents is also evidence against this view.

One point was very noticeable at the operation in the first case. The stomach was so tensely distended that it emitted a musical sound when an attempt was made to pick up its wall. It is impossible that a paralytically distended viscus can be in such a great condition of tension without some mechanical obstruction. How is the obstruction produced? The advocates of mechanical obstruction of the duodenum incline to one of two views—either that the duodenum is kinked by depression of the distended stomach or is compressed by the root of the mesentery and superior mesenteric vessels which cross it. The advocates of the latter view postulate a *primary* collapse of the intestine and prolapse of the

empty coils, causing dragging on the root of the mesentery and superior mesenteric vessels.

The writers have found by experiment on the cadaver that the stomach can be enormously distended by water pressure, with the jejunum cut across and lying patent. Moreover, the stomach remains thus distended. The same result can be attained after the superior mesenteric vessels and the peritoneal folds in their neighbourhood have all been divided. If, however, by introduction of the finger well behind the distended stomach a little to the left of the mid-line of the spinal column the fundus and posterior wall of the stomach be gently raised the excess of the fluid will at once flow freely away from the stomach through the cut jejunum. If the part of the duodenum which lies on the right side of the spine, behind the peritoneum, be incised, the tense distension of the stomach cannot be produced. They, therefore, conclude that the distension is due to actual pressure of the stomach on the part of the duodenum which crosses the third, and ascends by the side of the second lumbar vertebra to end in the jejunum. (See also "REVIEW," Vol. IV., p. 758.) They suggest, therefore, that in producing acute dilatation two factors come into play. First a paralytic condition of the viscus leads to distension, and then, at a certain stage the distended stomach actually produces obstruction by pressing on the duodenum on the front and to the left of the spinal column.

Acutely distended stomachs usually contain a quantity of gas as well as of bilious fluid. It is quite possible that a large quantity of this usually, but not always, odourless gas is derived from air which is consciously or unconsciously swallowed, and helps to increase the gastric distension. At the same time saliva is also swallowed, the patient's thirst leads him to drink freely, and possibly gastric hypersecretion also comes into play. When vomiting ceases in cases of acute dilatation of the stomach apparently the abdominal distension becomes extreme.

Acute Dilatation of the Stomach.—Wm. Ewart, M.D., F.R.C.P. (*Lancet*, Nov. 2, p. 228). —Acute gaseous dilatation of the stomach without any permanent obstruction frequently occurs. It is often associated with agonising pain and a feeling of impending death, yet is not fatal. The dilatation is usually unaccompanied by vomiting and is relieved by it when it does occur. The pain is due to the gastric or intestinal dilatation. The abdomen is enlarged, but to a great extent into the thorax. From such cases as those described by Dr. Thomson ("REVIEW," Vol. IV., p. 716) differ in all these particulars. The pain is not acute, vomiting gives no relief, the abdominal distension is not necessarily considerable or may be almost absent, the gastric distension is in the direction of the abdomen rather than in that of the thorax, and the intestine is almost airless. Death occurs from the exhaustion of vomiting rather than from pressure. These are essentially cases of obstruction. The dilated stomach is bent at an angle, and, not only the pyloric portion but the first part of the duodenum, is apt to take a sharply ascending direction, and the pancreas is also made to slope. The mechanism of the distension is obscure, and although in both groups there may be a large element of disturbed innervation the source of the gas or the fluid cannot be determined. But the mechanism of the obstruction in the second class is capable of explanation and sometimes of relief. That the pylorus is not the seat of absolute obstruction is almost proved by the fact that bile is vomited: it is proved, as in Dr. Thomson's Case 2 (*loc. cit.*) by the fact that the first portion of the duodenum was distended. In the other cases the duodenum may have been in an analogous condition. The combination of a collapsed intestine and of a distended first part of the duodenum, localises the obstruction. The latter is found, as was shown by Rokitansky, and later by Glénard, Kundrat, Schnitzler, Albrecht, and others, at the junction of the jejunum with the transverse portion of the duodenum; this is strangled by the weight of

the collapsed intestine which, like a cord over it, drags the mesentery, and particularly the superior mesenteric artery. According to this view the collapse of the intestine, howsoever produced, whether from marasmus or more often from shock or exhaustion, is the primary event and not the result of compression by a dilated stomach, and obstructive gastric distension follows. As mentioned by P. A. Albrecht, whose exhaustive essay in Virchow's *Archiv* was referred to in a paper by Mr. F. Jaffrey and the writer on "A case of Uncontrollable Vomiting relieved by Laparotomy and Manipulation and due to the Pressure of an Aneurysm" ("REVIEW," Vol. III., p. 101), the length of the mesentery is one of the factors. Intestinal collapse further elongates it so as to allow the intestine, particularly in women, to drop like a dead weight permanently into the pelvis.

This anatomical explanation is probably applicable, with variations, to most cases, and in particular to those which occur after operations involving profound anæsthesia and shock, and to those which arise apparently spontaneously after relatively trivial complications, in which the subjects are predisposed to enteroptosis by the length of their mesentery, malnutrition, and exhaustion. In some of the mysterious cases of so-called "hysterical or neurotic" type, with advanced emaciation and prostration, the persistent vomiting may be kept up by analogous conditions independently of major gastric dilatation.

The treatment of this form of obstruction is suggested by its cause. The stretched mesentery must be relieved by raising the intestine from the pelvic trough. The rational cure for the visceral malposition and the resulting gastric dilatation is posture. The knee-and-elbow position advocated by Albrecht may not often be available owing to the patient's weakness, but it may be possible to incline the patient to the right, to elevate the pelvis on pillows, and to raise the foot of the bed, whilst skilled manipulation is applied to the abdomen by the practitioner.

These simple measures should be borne in mind in all cases of persistent vomiting supervening in emaciated and exhausted subjects. Lavage is an obvious indication; and if, as alleged by L. Meyer, a distended and depressed stomach is competent to obstruct the duodenum, it might sometimes prove an effectual remedy. If this should fail laparotomy remains as the only resource, and it should be performed with an eye to this form of obstruction which, to include all varieties, might be described as "duodenal pressure-obstruction."

See also "Acute Obstruction at the Junction of the Duodenum and Jejunum" ("REVIEW," Vol. IV., p. 758).

Abscesses of the Skin in Infants.—

Dr. Brunier (*Progrès Médical*, Oct. 26, p. 257).

—Abscesses of the skin in infants are most common amongst the poor in bad hygienic conditions. Staphylococci, which are normally present on the skin, are the direct cause. The abscesses may be epidermic, dermic, or hypodermic. Clinically they may be divided into superficial and deep, but both kinds are usually associated in the same patient. The superficial are either vesicular or tuberculous. Small transparent vesicles appear, enlarge, and are gradually transformed into pustules, which ulcerate and become covered with blackish crusts. This evolution occupies 3 to 5 days. The vesicles appear in successive crops, especially on the buttocks and the legs. On certain parts they are confluent and may be mistaken for other conditions. On the head, for example, they become covered with green crusts and simulate impetigo; on the buttocks they resemble syphilitic erosions. In the tuberculous form the abscesses sometimes develop in the pilo-sebaceous apparatus, but most frequently in the sweat glands. At first there is a hard, indolent, more or less red nodosity, varying in size from that of a pea to that of a filbert, and movable on the subcutaneous cellular tissue, then the mobility becomes lost and ulceration and



Child, aged 2 months; superficial vesicular form of abscesses, following an attack of "green diarrhoea." On both heels are ulcers produced by the union of several vesicles, the rubbing having prevented their cicatrization.



Child, aged 16 months; superficial tuberculous form of abscess at different stages. Recovery followed the opening of 41 abscesses at one sitting, and 15 on the days following.



Child aged 2½ months; confluent vesicular form with deep abscess, especially of the buttocks and thighs. An ulcerated surface is seen in the left popliteal space.

discharge of pus occur. Evolution occupies 10 to 15 days. These abscesses are generally seen on the nape of the neck, the buttocks, the back of the legs, and the thighs. They appear in successive crops. Some writers call them furuncles, but erroneously, for there is no core, pain, heat, or tension.

Deep abscesses are often not recognised. They are about the size of a small pea or a cherry, and are situated deeply in the subcutaneous cellular tissue; they are hard, painless, and mobile, and, though fluctuation is absent, pus is present. The nodule may remain a long time in this state—cold abscess—25 or 30 days, or even more. Then it becomes hot, red, and superficial. Such abscesses may number 50 or 60. On the hairy scalp they sometimes produce extensive detachment of tissue extending almost to the bone, on the nape of the neck they cause intense lymphangitis, sometimes with

difficulty in the movements of the neck and even wryneck. The glands often suppurate and form enormous abscesses.

COMPLICATIONS: The mild ones are blepharitis, conjunctivitis, and stomatitis. Otitis is rare, but may be fatal. The most frequent complications of all are gastro-enteritis, broncho-pneumonia, and pyemia with metastatic abscesses.

TREATMENT.—Cleanliness, both of the child and the nurse, is important in prevention. After each suckling the nipple ought to be washed with an antiseptic solution. The abscesses should be opened with a fine thermo-cautery in preference to the bistoury, because this method is less painful and a cicatrix does not result. Every second day a bath of corrosive sublimate (1 in 1500) should be given for 20 minutes. There is no danger of mercurial absorption. The general health must be attended to.

Cerebral Hæmorrhage in Ulcerative Endocarditis.—M. Simmonds (*Deutsche Med. Woch.*, May 30, p. 353) reports 7 cases of endocarditis in which fatal cerebral hæmorrhage occurred. The patients were mostly young people in whom there was no other arterial or nervous disease, or history of syphilis, alcoholism, gout, or renal disease. In the first two cases, in children, aged 10, the hæmorrhage was due to rupture of an aneurysm of the size of a pea on a pial artery. In the aneurysmal walls the intima was absent and the media was ragged; the arteries beyond the aneurysms were thrombosed. In the thrombosed vessels and the neighbourhood of the ruptured aneurysm were numerous heaps of staphylococci, which were also present in the cardiac vegetations. In the first case the hæmorrhage in the right hemisphere had ruptured into the lateral ventricle; there was also an unruptured miliary aneurysm on the left side, and a serous cyst with rust-coloured walls, probably the remains of a previous hæmorrhage, in the occipital lobe. In the third case, in a woman, aged 32, an aneurysm of the right Sylvian artery of the size of a pea ruptured into the frontal lobe; there were vegetations on the mitral valve. In the fourth case, in a girl, aged 27, who had been treated for years for endocarditis, sudden death occurred from apoplexy. There were an aneurysm of the size of a hazel nut on the basilar artery, and three of the size of lentils on the right Sylvian artery. The source of the extensive hæmorrhage in the left hemisphere could not be determined, but was doubtless another aneurysm. In the 3 remaining cases there was no proof of the presence of an aneurysm. The patients were aged from 32 to 50 years; the arteries were healthy, and there were vegetations on the valves. The cerebral hæmorrhage was possibly a coincidence not connected with the disease of the valves, but the absence of renal or arterial disease rendered this unlikely.

Ponfick claims a purely mechanical origin for aneurysms in endocarditis with vegetations. Small atheromatous fragments become free and

are caught at the point of division of some small artery; a sharp, calcareous corner is then gradually forced through the inner and middle layers of the arterial wall, and an aneurysm results. If calcareous vegetations are absent, softer emboli may gradually produce "decubital" or pressure ulcers of the arterial wall. This traumatic theory, however, is applicable only to the minority of cases. As Eppinger has shown, the remainder are due to septic embolism. The cardiac vegetations contain microbes, so that when they become free and produce embolism, they set up inflammatory destruction of the arterial wall, which gives way and forms an aneurysm. Such mycotic embolic aneurysms are analogous in origin to the common "worm aneurysms" of the horse, described by Eppinger and Bollinger. The larvæ of an intestinal nematode parasite, named *strongylus armatus* or *sclerostomum equinum*, enter the mesenteric arteries, where they produce inflammation and aneurysms, often of the size of a child's head, which contain several worms. Thus the parasites, which are $\frac{1}{2}$ to $\frac{3}{4}$ in. long produce the same results in the horse as do micrococci in man.

In the first two of the writer's cases the bacterial origin of the aneurysms was evident; in the remainder it could not be demonstrated; in the third and fourth cases probably because the endocarditis and the aneurysms were of ancient date and the microbes had long disappeared. Endocarditis is probably a more frequent cause of cerebral hæmorrhage than is supposed.

Post-Diphtherial Purpura.—Dr. E. W. Goodall (*Lancet*, Nov. 30, p. 1492).—A girl, aged 11, was admitted to the Eastern Fever Hospital on Sept. 16, 1901, the second day of an attack of diphtheria. There was a thick layer of membrane on each tonsil, the cervical glands were enlarged, and the temperature was 103·6°. Antitoxin (6000 units) was injected and the fauces were flushed with an alkaline solution

every 4 hours. The progress was favourable, and on the 22nd the membrane had quite disappeared. On the 23rd and 24th there was urticaria of the trunk, face, and limbs, without pyrexia, but on the 25th this rash had disappeared. On the 26th there was again a slight erythematous rash but no pyrexia. On the 27th a purpuric eruption appeared on the limbs, chiefly about the elbows and on the front of the legs. There were a few spots on the trunk and some hæmorrhage beneath the right conjunctiva. Mixed with the spots on the skin was a circinate erythema. There was also bleeding from the nose and mouth, and pin-point hæmorrhages were observed in the buccal mucous membrane. The temperature was 100·2° and the pulse-rate was 130. On the 28th fresh purpuric spots appeared on the face and on the trunk and limbs. Most of the spots were cutaneous, small, and purple, but a few were subcutaneous, larger, and blue. Bright blood was passed per anum on Sept. 27th and 28th. On the 29th the hæmorrhages were beginning to fade and the larger ones were greenish brown, like old bruises. The circinate erythema was still present. The patient complained of pain in some of the joints and her temperature rose to 102·6°. Next day the pains in the joints were worse, the large joints being chiefly affected. There was some effusion into the right knee-joint. By Oct. 3 the joint affection had dispersed. On Sept. 27 and 28 while the hæmorrhages were coming out, the girl was restless and anxious, complained much of thirst, and slept little. There were also nausea and occasional vomiting. On Oct. 1 the temperature became normal. After Oct. 3 recovery was fairly rapid, though from the 5th to the 15th there were pain and tenderness in the course and distribution of the ulnar nerve. There was no albuminuria.

Calcium chloride, 5 gr. every 4 hours, was given on the appearance of the purpura and was continued till Sept. 30. Pain was relieved by opium and phenalgine. The nausea and

vomiting necessitated the administration of nutrient enemata for 2 or 3 days. Including the present one, the writer has seen only 3 such cases.

A similar, but more severe case was published by Dr. C. W. Buckley, ("REVIEW," Vol. IV., p. 549). These rare cases of purpura following diphtheria must be distinguished from the common ones in which hæmorrhages into the skin and from mucous membranes occur during the acute stage of the disease (hæmorrhagic diphtheria). Practically every case of hæmorrhagic diphtheria is fatal. But the prognosis of post-diphtherial purpura is not always grave. In fact the cases referred to all ended in recovery.

A Trace of Albumin and a few Tube Casts in the Urine of certain Men above 50.—Prof. William Osler (*New York Med. Jour.*, Nov. 23, p. 249).—The business man who strives hard for wealth, takes plenty of good food, with two or three glasses of spirits, and smokes many cigars, works in ignorance that his bodily mechanism in some respects resembles that of the steam-engine. The "fuel" is out of proportion to the "energy" liberated. "Careless stoking" with high pressure for 25 years means early degenerations, and "the waste-pipes"—the kidneys—are often the first to show signs of ill-usage. He is surprised when his insurance company declines an increase in his life policy because of a "slight trace of albumin and a few tube casts in the urine." However, if at 50 he restricts his diet, gives up alcohol, and resigns his position on six or eight boards, the discovery of the albuminuria will be a benefit. Albumin and casts were accidentally discovered in the urine of a distinguished public man. He was nearly 60, lived a very active life, and was careless in eating and drinking. He resumed work after a year's rest and is now a vigorous nonagenarian. In men in the fifth and sixth decades albuminuria is by no means infrequent and not always serious. It

probably results from pre-senile changes in the kidneys, the result of arterial degeneration (the "renal inadequacy" of Sir Andrew Clark).

The albuminuria and the number and variety of the casts are not of as much importance in prognosis as other factors. The indications of serious disease are: (1) persistent low s.g. of the urine (1008 to 1012); (2) marked arterial sclerosis with the apex beat an inch or two outside the nipple line and a ringing accentuated aortic second sound; and (3) albuminuric retinitis. A trace of albuminuria and a few casts are the danger signals. A very important factor in their production is the excessive amount of food eaten. Prof. Osler is much impressed by Aphorism 13 of George Cheyne's "Essay on Regimen." "Every wise man after 50 ought to begin to lessen at least the quantity of his aliment; and if he would continue free of great and dangerous distempers and preserve his senses and faculties to the last he ought every 7 years to go on abating gradually and sensibly and at last descend out of life as he ascended into it, even into the child's diet."

Diagnosis and Treatment of Malaria.—

P. T. Manson, M.B. (*Guy's Hosp. Gaz.*, Dec 7, p. 525).—There are 3 methods of diagnosis—(1) clinical (2) therapeutic (3) microscopic.

I. THE CLINICAL METHOD.—Every typical case of malaria shows a series of paroxysms which recur at definite intervals of 24, 48, or 72 hours. A tertian periodicity (every 48 hours) or a quartan (every 72 hours) is pathognomonic of malaria. But a quotidian (every 24 hours) is not. Many diseases exhibit a quotidian rise in temperature, e.g., phthisis and septic and typhoid fevers. Countless mistakes have been made by diagnosing malaria in a patient who gives a history of residence abroad, is anæmic, has an enlarged spleen, and suffers from quotidian pyrexial attacks. Thus a gentleman who had for years resided in India came home and fell ill. He had

a pyrexial attack every evening, rigors occasionally occurred, the spleen was enlarged, and he was anæmic. He took large doses of quinine, thinking that he was suffering from malaria, but he got no better. The blood contained no malarial parasites. Searching for an explanation of the pyrexial it was found that for years he had suffered from urethral stricture and that he was leading a catheter life. On examining the perineum, extravasation of urine was discovered, yet this patient was a doctor! Another patient with a similar history had been ill some weeks with these signs and symptoms. Malaria was diagnosed, but he failed to improve under quinine. The blood contained no malarial parasites. A history was elicited of dysentery some months previous. The liver was slightly enlarged and, perhaps, somewhat tender. It was explored, an abscess found, opened, and drained, and the patient recovered.

II. THE THERAPEUTIC METHOD.—If malaria is suspected and the patient recovers under quinine given in the right amount and form, the suspicions are confirmed.

III. THE MICROSCOPIC METHOD.—The first and second methods of diagnosis if uncombined with the microscopic are at least clumsy, uncertain, and unscientific. Clean the finger with spirit, prick it with a clean needle, wipe away the first drop of blood, and when a second appears remove it on the centre of a perfectly clean coverslip held face downwards with clean dry forceps. Drop the charged coverslip face downwards on a perfectly clean slide and ring the coverslip with vaseline. Examine with a $\frac{1}{4}$ th oil immersion, using a mechanical stage, scrutinize the interior of every corpuscle and spend at least 15 minutes before saying parasites are absent. If the blood film is so thick that individual corpuscles cannot be seen take another film.

There are at least 3 varieties of parasites giving rise to at least 3 distinct varieties of fever—benign quartan, benign tertian, and malignant tertian. All live in the red corpuscle till they sporulate. When they do the paroxysm occurs.

The benign quartan parasite lives in about equal numbers in the peripheral and visceral blood. It commences as a feebly amoeboid mass of protoplasm. Movement soon ceases and large coarse granules of pigment appear, and a vesicular nucleus is seen. When 72 hours old spores form, which number 8 to 10, and are arranged in a symmetrical "daisy form" around a central mass of black pigment. Each spore is pear-shaped and has a bright nucleus. If the patient is infected with a single generation of quartan parasites paroxysms will occur on, say, Monday, Thursday and Sunday (simple benign quartan fever). If in addition he harbours a second generation, which sporulates on Tuesday, Friday, and Monday, he will have paroxysms on Monday, Tuesday, Thursday, Friday and Saturday (double benign quartan fever). If he harbours a third generation, which sporulates on Wednesday, Saturday and Tuesday, he will have malarial paroxysms on every day of the week (triple quartan infection).

The benign tertian parasite lives in smaller numbers in the peripheral than in the visceral blood and matures in 48 hours. Beginning as an amoeboid mass of protoplasm, it loses activity, develops pigment granules, which are active and move slowly about in the parasite. It has a vesicular nucleus. When 48 hours old it is larger than the normal red corpuscle and, what is of great importance in its recognition, has expanded and decolourised the corpuscle. It then sporulates. Sporulation occurs more commonly in the visceral than in the peripheral circulation, consequently sporulating forms are rather uncommon in the finger-blood. The spores number 15 to 26, and are arranged more or less like a rosette. Supposing the malarial paroxysms occur on, say, Monday, Wednesday, Friday, and Sunday, this is simple benign tertian malaria. If, in addition the patients harbour parasites which sporulate on Tuesday, Thursday, Saturday and Monday, he will have paroxysms on every day of the week (double benign tertian malaria.)

The malignant tertian parasite lives in much larger numbers in the visceral than in the peripheral blood, and the total number of parasites in the circulation is much larger than in the benign affections. Two kinds of parasites are demonstrable in the finger blood—fever forms and crescent forms. The fever forms begin as actively amoeboid masses of protoplasm, lying at first on, and then in the red corpuscle. There may be two in one corpuscle. As they age on the slide activity ceases and they settle down as minute colourless rings which are never large. Finely granular pigment is formed. The affected corpuscles are apt to become smaller than a normal red corpuscle, to assume a brassy colour, and they may become distorted and crenated. This change in the red corpuscle is almost pathognomonic of malignant malaria but is not constant. Sporulation occurs when the parasite is 48 hours old. It takes place in the viscera, and consequently is seldom or never seen in finger-blood. The paroxysm differs from the typical malarial paroxysm in that the rigor is less marked, the pyrexial stage longer and, possibly, accompanied by severe vomiting, diarrhoea, boneache, headache; anorexia, and mental depression. The crescent body is derived from these fever forms but does not cause fever, does not sporulate, and does not appear for some 6 to 8 days after the fever forms have appeared.

Having found a parasite in the blood, determine the following: (1). How large is it compared with the red corpuscle? (2). Does it contain pigment—course or fine, stationary or active? (3). Is it amoeboid, slightly or greatly? (4). Is the affected corpuscle larger or smaller, darker or lighter than a normal red corpuscle? (5). Is the parasite sporulating. How many spores are there, and how are they arranged? (6). Is it of the same age as other parasites on the slide? (7). Does it belong to the same variety as other parasites? (8). Are there crescents or crescent derived flagellated organisms. With a little experience these points can be decided with comparative ease and it can be said

whether there is (1) a simple, double, or triple benign quartan fever; (2) a simple, or a double benign quartan fever; (3) a malignant fever or (4) a combination of these 3 types.

Another diagnostic feature in the blood examination, and one which is constant in all malarial and post-malarial conditions is a relative increase in the large mononuclear leucocytes. According to the books, these form about 10 per cent. of the leucocytes of normal blood, but according to some writers more, say 15 per cent. Now in all malarial and post-malarial conditions they form over 20 per cent., sometimes 30 per cent. This increase persists for at least 3 months after a malarial attack and is of value in deciding (1). Whether a patient has malaria, or (2), has had it during the previous 3 months.

The term malignant malaria is bad, for a patient who harbours parasites of malignant malaria may have a fever which may be milder than even the mildest benign quartan or tertian, though usually it is more severe; nevertheless, though he is comparatively slightly ill, he at any time is liable to a sudden outburst or explosion of the disease. These "pernicious accesses," if not vigorously and promptly treated with quinine are liable to be fatal. Their pathology is as follows: For some unknown cause an excessive accumulation of the malignant parasites occurs in an important viscus, where they sporulate, and plug the capillaries, leading to anæmia of the part with alarming or fatal consequences. Thus, if the brain is affected, there may be (1) hyperpyrexia, (2) coma, (3) mania, (4) paralysis, paresis, aphasia, apoplexy, fits, (5) blindness—according to the centre which has been rendered anæmic. If the stomach is affected there are gastric attacks; the intestine, diarrhoeic, choleraic, or dysenteric symptoms; the heart, syncope. To a patient with a pernicious access quinine is as essential as is operation for strangulated hernia. Pernicious accesses come on with extraordinary suddenness in the course of malignant malaria, therefore regard a patient who has crescents in

his blood as one in whom alarming and fatal symptoms may suddenly supervene. If possible, keep him in bed and under strict observation till the parasites disappear.

The treatment of malaria is summed up by the word quinine. It may be given by (1) mouth (2) rectum, (3) intramuscular injection, (4) intravenous injection. If possible always use the hydrochloride or acid hydrochloride.

1. BY MOUTH.—In a mild case of benign tertian, benign quartan, or mild malignant fever, wait till the sweating stage has set in; then give 10 gr., preferably in solution. Follow this by 5 gr. t.d. for a week, and then by 5 gr. t.d. every Sunday for the next 3 months. A benign tertian or quartan fever will probably be arrested after the first day or two, but after some 6 to 9 months recurrence may take place from lowering of the general vitality by cold, excesses in food and drink, worry, or some illness. Malignant malaria is not checked so readily, but once overcome there is less liability to recurrence. Avoid pills and tabloids, they are often passed unchanged.

2. BY RECTUM.—For children and those in whom quinine causes vomiting rectal injections, are of great value. See that the injection is retained.

3. BY INTRAMUSCULAR INJECTION.—This method is very efficacious, especially in cases of malignant malaria which must be rapidly and thoroughly brought under the influence of quinine. Though morphia and strychnine may be injected hypodermically in the tropics with only good results, quinine injections are frequently followed by tetanus. Cautious practitioners therefore refuse to inject quinine. Danger may be avoided by thorough asepsis. The requirements are:—
(1). A test tube sterilized by boiling, and lying in 1-20 carbolic solution. (2). A hypodermic syringe, sterilized by boiling and lying in 1-20 carbolic solution. (3). A minim glass sterilized by boiling, and lying in 1-20 carbolic solution. (4). Quinine hydrochloride in tabloid or powder. (5). A test tube holder. (6). A spirit

lamp. (7) Boiled water. Render the hands surgically clean and put the quinine into the test tube, say 10 gr. Add some 20 minims of boiled water, and boil the mixture well; allow it to cool slightly and pour the solution into the sterile minim glass, from which it is sucked up by the sterile hypodermic syringe. The skin over the gluteal region should be scrubbed with 1-20 carbolic solution. Plunge the needle at right angles to the surface deep into the gluteus maximus and inject slowly. Cover with a sealed dressing.

4. BY INTRAVENOUS INJECTION.—This method is highly recommended by some authorities. A solution made as follows is employed :

R Quininae hydrochlor ... 1 gramme.
Sodii chloridi ... 75 centigrammes.
Aq. destill. ad ... 10 grammes.

Of other drugs the writer only recommends euquinine. It is tasteless and has a direct toxic action on malarial parasites, and is therefore of great value for children, who hate quinine.

Treat symptoms such as headache, hyperpyrexia, etc., as they arise, but avoid large doses of antipyrin.

Tumour of the Pituitary Body without Acromegaly.—Alfred Fröhlich (*Wien. Klin. Rundsch.*, Nov. 23, p. 883, and Dec. 1, p. 906).—A boy, now aged 14, suffered in Nov. 1899, from fortnightly headaches followed by vomiting. The pain was usually on the left side anteriorly, but was sometimes bilateral. Memory and intelligence were above the average. The retinae was normal. Nothing more was heard of him till Aug. 1901. It was then stated that he had rapidly increased in weight since March, 1899. In Jan., 1901, vision in the left eye became impaired. In July, 1901, the headaches and vomiting recommenced. In Sept. 1901, the left pupil reacted to accommodation, but not to light. The right pupil reacted well. There was atrophy of the left optic nerve, the right optic nerve was

normal. There was left amaurosis; in the right eye vision was $\frac{5}{30}$, and there was right temporal hemianopsia. There was no vertigo, and speech, sensation, and reflexes were normal. The left temporal fossa was tender. Recently there had been some improvement in the general symptoms, with less vomiting; this coincided with the administration of thyroid tablets.

The symptoms produced by tumours of the hypophysis not accompanied by acromegaly were well known before acromegaly was described. A large number occur in lunatics. There are vertigo, vomiting and convulsions, which are common to all intracranial processes, which diminish the cubic capacity of the skull. Disturbances of smell, oculo-motor paralysis, and amblyopia depend on local compression. According to Zander the pituitary body is frequently situated in front of instead of behind the optic chiasma. In 60 per cent. of all cases the chiasma deviates more or less to the right or left; an unequal affection of the optic nerves may depend either on this or on an uneven extension of the growth. If one or both optic nerves are compressed, optic atrophy and complete blindness of the corresponding eye result. If the chiasma is compressed anteriorly, there is bitemporal hemianopsia. In tumours of the hypophysis complete blindness on one side is often present with temporal hemianopsia on the other. Choked discs, which depend on a general rise of intracranial pressure, are exceedingly rare compared with simple optic atrophy due to direct compression. Sudden blindness has occurred in some acute cases of rapidly growing pituitary tumours, and apathy, childishness, deliberate speech, high terminal pyrexia, a subnormal temperature, intermittent blindness, somnolence, diabetes mellitus, and polyuria may all occur. In many cases tumours, and especially gummata of the pituitary body have given rise to no symptoms and been discovered accidentally after death.

The symptoms hitherto mentioned, suggest in the writer's case, a tumour at the base

of the brain in the neighbourhood of the optic chiasma; the slow course and the asymmetrical affection of the optic nerves point decisively to compression of the pituitary region. But what justifies the diagnosis of a tumour of the hypophysis cerebri? Schlesinger states that it should not be made unless typical acromegaly, with changes in the face and head and certain cerebral symptoms are present; if the latter are unaccompanied by acromegaly they may, for instance, be due to an aneurysm or atheroma of the circle of Willis. But in this case there was no indication of acromegaly. The boy was well developed and nourished, and in Aug., 1901, at the age of 14, weighed 119 lb., the average weight for a boy of that age being 86 to 88 lb. A rapid increase of weight occurred after the onset of the cerebral symptoms $2\frac{1}{2}$ years before. The fingers, with the exception of the terminal phalanges were thick, but there was no increase in the size of the bones of the hand. There were marked adipose deposits in the skin of the trunk, especially over the abdomen and genitals. The normal penis was so embedded in the subcutaneous fat as to approach the feminine type, and the mammary glands were large. There were no hairs in the axilla, and only a few on the pubes. The hair of the scalp was brittle, short, scanty and constantly shed. The skin was dry, in places desquamating, and felt as though thickened. Even in the height of summer the patient was chilly.

Cases of tumours or simple hypertrophy of the pituitary body have been reported, probably in sufficient numbers to preclude coincidence, in which unusual deposit of subcutaneous fat was a prominent symptom. In all of these there was no acromegaly. This adipose deposit is probably of trophic origin, and the deficient development of hair, the rapid growth of the nails, the hypertrophy of the mammæ, and the peculiar condition of the pubes present in this case, probably had the same origin. The diagnosis of a tumour of the pituitary body rests, therefore, on the combination of

certain cerebral and trophic symptoms, among which adiposity was the most conspicuous in a case in which acromegaly was absent. The thyroid gland was normal, though the scanty growth of hair, the thickening of the skin, which could be pinched up in folds only with difficulty, and the constant sensation of cold suggested a myxœdematous condition. It is taught by the Vienna school that the diseases of the organs with an "internal secretion" present many points of similarity, and in this case the myxœdematoid symptoms may have been due to disease of the hypophysis. Apart from the fact, proved experimentally, that the hypophysis invariably hypertrophies after extirpation of the thyroid gland there are clinical connections between the two. Schlesinger observed all the symptoms of a well marked case of myxœdema disappear, to be replaced by those of acromegaly, and Uhthoff has published the case of a dwarf with bitemporal hemianopsia; the arrest of growth probably followed atrophy of the thyroid gland, and the hemianopsia the consequent compensatory hypertrophy of the pituitary body.

The Primary Lesion of Leprosy.—L. Glück (*Wien. Med. Woch.*, July 27, p. 1420 and Aug. 3, p. 1468).—It is doubtful whether leprosy, like syphilis, always begins with a primary lesion, and reported cases in which this onset was observed are rare. Of 200 cases of leprosy seen by the writer in Bosnia in 3 a single lesion was observed for some time before any other sign of leprosy appeared. The initial leprosy lesion is a round, sharply defined, raised, flattened, infiltration of a dull red or glistening coppery colour, or occasionally even darker. The centre gradually fades and subsides so that the edges alone are raised. The whole lesion may attain the size of the palm. The final stage is a brilliant white atrophic spot, which may or may not desquamate, is more or less anæsthetic, and is surrounded by an infiltrated

margin. There is no pain or inconvenience of any kind, which perhaps explains why the patient usually overlooks the lesion, or at least does not seek advice. This initial eruption may be the only sign of leprosy for months or years. It is most often situated on the limbs, less often on the face, and rarely on the trunk. It may also occur on the mucuous membranes, especially of the nose. Sticker asserts that the nose is as often the usual site of the primary lesion of leprosy as the penis is of the primary chancre of syphilis, but this is a mistake. The writer has observed but one case in which the nasal mucosa was primarily affected; the infiltrated nodules break down earlier than they do on the skin, and may form ulcers. Sticker has discovered, however, one point of diagnostic importance: in a great number of cases of tubercular and tuberculo-anæsthetic leprosy the nasal secretion contains leprosy bacilli. The possibility of producing leprosy intentionally by inoculation or accidentally by vaccination for small pox (Hansen's bacillus has been found in the vaccine vesicles of leprosy patients) greatly adds to the probability that a primary lesion is the rule in leprosy. In 1884, Arning inoculated a healthy Hawaiian by introducing a leprosy nodule into a cutaneous incision. Five months later a yellowish granuloma appeared in the keloid cicatrix; shortly before there had been rheumatic pains in the limbs and symptoms of neuritis in the inoculated arm. These disappeared soon after the appearance of the primary lesion. Four years later there was typical leprosy. Daubler and others have reported cases in which the primary lesion of acute leprosy began a few weeks after vaccination in the cicatrices. Lutz and Geill state that in 50 per cent. of the cases of leprosy seen by them in the Dutch East Indies the first signs appeared on the feet. They therefore conclude that in the majority of cases leprosy bacilli penetrate the skin of the feet from the soil.

It is not known whether the primary leprosy lesion is at first purely local, or whether it is the

first symptom of general infection. Von Bergmann states that excision of the primary lesion does not prevent the subsequent appearance of general symptoms. The nerves are occasionally affected very rapidly, and Von Bergmann's cases are too few to decide whether early excision might be successful.

Erythema Gyrratum, Papulosum, and Bullosum following the Administration of Arsenic.—Prof. Neumann (*Wien. Klin. Woch.*, Nov. 21, p. 1145).—Liquor arsenicalis 3 drops twice a day, and the dose to be increased by 1 drop every fourth day until 10 drops twice a day were taken, was ordered for a man, aged 37, suffering from furunculosis. The dose was then to be diminished until 6 drops were taken twice a day. Four weeks later the soles of the feet began to burn. On Aug. 29, after 40 gm. (676 minims.) containing 0.40 gm. (about 6 grains) of arsenious acid had been taken, an eruption appeared on the hands, feet, and inner surfaces of the thighs, scrotum, nates, and face.

The patient was a well developed man. The pulse was accelerated, and the temperature slightly raised. There were insomnia, intolerable itching, anxiety, and restlessness. The urine contained 0.30 of sugar per cent. and traces of arsenic, but no albumin. The face was red and puffy, the eyelids were œdematous and covered with crusts, the scrotum was red, swollen, weeping, and covered with scattered scabs. On the inner surface of the thighs and on the folds of the nates were rows of closely packed vesicles. The anterior half of the palms and soles were swollen and covered with flattened vesicles and bullæ, which varied in size between a lentil and a half-crown. The affected palmar parts were separated from the normal skin of the dorsal surfaces by a sharply defined sinuous red line, though there

were elevated red papules on the dorsal surface of the toes. On Oct. 25 fresh flattened sharply defined vesicles on a reddened and swollen base, and about the size of a farthing, appeared on the backs of the hands, especially over the interphalangeal joints. There were intense redness and swelling of the nail bed. The bullæ on the palms were beginning to disappear, though there was still the sharp red line towards the dorsum. On Oct. 29 some marginal redness on the feet remained, all the vesicles having disappeared, and there was still redness of the backs of the hands and between the fingers. On Nov. 2 all the redness and swelling had disappeared, and there remained only yellow crusts to mark the former position of the vesicles. The gyrated margin still persisted as a line of desquamation.

If this eruption had appeared in a case of psoriasis or lichen ruber treated by arsenic it might have been doubtful how much was due to arsenic, and how much to the disease. The general symptoms were serious. It is remarkable that this is the only case of a vesicular eruption due to arsenic which has occurred in the writer's enormous hospital and private practice, though arsenic is frequently prescribed in large doses and taken for decades together.

Purpura Hæmorrhagica associated with General Tuberculosis.—Eldon Pratt, M.D. (*Brit. Med. Jour.*, Sept. 28, p. 865).—A Greek sailor, aged 25, was admitted to hospital on April 1. He had felt weakness for some 6 weeks but had been worse during the last 10 days with pains all over the body and slight cough.

He looked fairly healthy and had a temperature of 103° and a slight cough without expectoration. A few rhonchi were heard over the right lung. The condition continued much the same with considerable pyrexia, varying between 100° and 104° . On April 22 there was epistaxis. Widal's reaction was negative. On April 23 there was marked hæmaturia with continued epistaxis at

intervals. There was no cough, but a few crepitations were heard over the lungs, especially at the right apex. On April 26 there was blood in the stools and the hæmaturia and epistaxis continued. He was visibly getting weaker. On April 27 there were 2 or 3 purpuric spots on the back and near the lips. He was quite prostrate. On April 29 there was a purpuric eruption on the arms, chest, and abdomen. Round the lips it was marked. On May 1 the glands at the angles of the jaws were enlarged and tender and there was profound anæmia. On May 3 the parotid glands were suppurating. Still there was no cough and there were only scanty signs in the lungs. On May 12 the left parotid gland was incised, and on May 15 the right, a good deal of pus escaping from each. On May 22 he was very wasted, and the feet were œdematous. He was delirious at nights and perspired greatly. There was much bleeding from sore gums. On May 27 the purpuric eruption was extensive over most of the body. He gradually sank and died on June 8.

NECROPSY.—There was extensive miliary tuberculosis of all organs, especially of the lungs, spleen, and pleuræ, and ulcers in the gastric mucous membrane. There was marked enlargement and caseation of all the lymphatic glands.

The association of purpura hæmorrhagica with general tuberculosis is extremely rare. The probable duration of the whole illness must have been between 3 and 4 months. The case suggests that the pathology of purpura is to be found in a general bacteria infection. Dr. Stephen Mackenzie has recorded 200 cases of purpura, 4 of which were associated with tuberculosis, but what form is not stated.

Diagnosis of Abscess of the Liver.—P. T. Manson, M.B. (*Guy's Hosp. Gaz.*, Dec. 7, p. 529).—The diagnosis of abscess of the liver may be very easy or very difficult. To take a case in which it is easy:—The patient gives a history of dysentery for some weeks. From this he recovers, but after some weeks begins

to feel ill, loses appetite and weight and has slight pyrexia at night. Then he begins to feel pain in the liver and perhaps in the right shoulder. Night sweats become constant and there is regular quotidian pyrexia at night of 2, 3, or 4 degrees, with morning remissions. On examination the patient looks very ill, is wasted, and has a peculiar muddy complexion. No malarial parasites are present in the blood. The liver is unequally enlarged, and there may be bulging or fluctuation, or there may be a tender spot. There may be signs of involvement of the lower lobe of the right lung. Local bulging and local œdema point strongly to suppuration.

A difficult case is such a one as this:—The history of dysentery is not clear, there is little or no enlargement of, or pain in the liver, and there are no localising signs of pus. The temperature may be sometimes raised at night, sometimes normal. Night sweats may or may not be present, and there are few or no signs of involvement of the lower lobe of the right lung. In spite of treatment the patient gets worse, loses flesh, becomes of a muddy complexion.

Dr. Patrick Manson gives the following rules in tropical practice:—Think of hepatic abscesses in all cases of progressive deterioration of health, and in all obscure abdominal cases with evening pyrexia, especially if there is a history of dysentery with an enlarged and painful liver. Always examine the blood for malarial parasites. If in doubt give an anæsthetic and explore the liver, using an exploring syringe with a needle at least $3\frac{1}{2}$ in. long. Make at least 6 punctures before giving up the search for pus. If there are localising signs of pus explore where they are; if there are no localising signs, begin in the eighth or ninth interspace in the axillary line. As most abscesses lie in the right lobe above and behind, direct the needle upwards and backwards. If unsuccessful, explore the rest of the liver in at least 5 or 6 places. The needle is known

to be in the liver by the barrel of the syringe moving up and down with respiration. If pus is not found easily the needle may have gone through an abscess into healthy liver beyond, therefore on withdrawing the needle see that there is a good vacuum in the syringe barrel, so that with slow withdrawal, if the needle point re-enters the abscess, pus will well up into the vacuum. Liver pus is not like the ordinary pus, but is chocolate-brown. Having found pus withdraw the syringe, and over the site of the puncture make an incision large enough to admit a large trocar and canula and perform Manson's operation. (See "REVIEW," Vol. IV., p. 583).

Diagnosis of Tuberculous Meningitis by Lumbar Puncture.—R. Breuer (*Wien. Klin. Rundschau*, Oct. 9th, p. 741).

—Lichtheim has shown that the cerebro-spinal fluid obtained by lumbar puncture coagulates spontaneously in meningitis, but not in other affections. This spontaneous coagulation enables meningitis to be diagnosed with certainty. In tuberculous meningitis tubercle bacilli have been often found in the fluid obtained by puncture. As they have not always been detected (in cases in which the disease has been proved to be tuberculous meningitis) the fluid has been injected into animals. Hellendal has injected the fluid obtained in cases of tuberculous meningitis into the subarachnoid space of guinea pigs and produced tuberculous meningitis. Langer has found that the cerebro-spinal fluid is a good cultivating medium for tubercle bacilli, hence he advised that the puncture fluid should be placed in a hot chamber for some time, so that the tubercle bacilli if present may increase in number before the examination is made. This unfortunately delays the diagnosis too long. Widal and others have pointed out a characteristic microscopic appearance of the fluid: In non-tuberculous meningitis the leucocytes found in the fluid are

polynuclear, whilst in tuberculous most or all of the leucocytes are mono-nuclear. In simple transudation, without inflammation, the cells are almost exclusively endothelial. There are many exceptions to these rules, and thus the value of this method of examination is impaired.

The writer describes a means of detecting tubercle bacilli in the fluid, which gives excellent results. Of 17 cases examined in this manner, he found tubercle bacilli in all, and the diagnosis was afterwards confirmed by necropsy. The method is as follows:—4-5 c.c. of cerebro-spinal fluid are obtained by lumbar puncture, and placed in a sterilised test tube, which is surrounded with cotton wool and kept in one position without being shaken for 3 to 6 hours. A small fine coagulum will then have formed. In this fine clot the tubercle bacilli are clustered. The clot is removed, placed in a large cover glass, teased, and dried. The cover glass is passed thrice through a flame, stained with carbol fuchsin, decolourised with nitric acid (1 to 5 of water), washed in alcohol, and counter-stained with methylene blue solution in the usual way. Before mounting the specimen in Canada balsam it is best to place it in absolute alcohol for 1 to 2 minutes, and then in xylol.

Meralgia.—H. Sievert (*Monats. f. Unfallheil. u. Invalid.*, Nov. 15, p. 343).—Since meralgia (neuralgia or paræsthesia of the external cutaneous nerve of the thigh) was described, in 1895, by Roth and Bernhardt, about 100 cases have been published. In 1900 Brisard collected 94. The comparative rarity of symptoms preferable to this nerve probably depends on its purely sensory function, since in injuries of mixed nerves the sensory disturbances are less marked than the motor, that is, to produce sensory lesions the injury must be greater. The writer excludes from consideration all cases in which the meralgia was of central origin. Predisposing causes are disorders of metabolism, chiefly diabetes, obesity,

and gout, intoxication by alcohol, or more rarely, by nicotine, morphine, or lead, hysteria, and neurasthenia. If any of these causes be present meralgia may follow a very slight injury. Exciting causes are injuries (external violence, internal tumours, and pregnancy, stretching the nerve by bending the body backwards, and even prolonged standing), which occurred in 20 per cent. of all cases, infective diseases, especially typhoid fever and influenza, more rarely syphilis, polyarthritis, gonorrhœa, pharyngitis, and chill. The infective diseases and chill are, however, frequently predisposing causes. It is often difficult to exclude simulation, since there is no muscular atrophy or other objective sign. But the limb may be rendered useless by meralgic paræsthesia, as the pain is usually caused or aggravated by any movement such as walking.

A previously healthy workman, aged 30, was crushed on April 30 between a railway carriage and an iron plate; both hips and the right thigh were bruised. He was treated for some time in hospital, and the thigh was aspirated 3 times. On the first occasion blood was obtained; on the last, 6 weeks after the accident, the nature of the fluid obtained was not known. The writer saw him on Sept. 10. There was no swelling or tenderness of the right leg, and the hip and knee joints appeared normal. Walking, prolonged standing, and ascending stairs produced pain over the great trochanter, the outer side of the thigh, and above the knee. The patellar reflex was absent on the right side, but Romberg's sign was not present. The patient was markedly flat footed. On Nov. 30, after systematic exercises and massage, the pains, which were likened to electric shocks, still persisted over and below the great trochanter, and anteriorly from the knee to the middle of the thigh. They were aggravated by walking and change in the weather, and caused the patient to limp with the right leg, so that he could walk only with a stick. The distribution of the pain corresponded fairly accurately with that of the external cutaneous nerve. There was no anæsthesia or hypæsthesia.

In other cases there was no paræsthesia, but marked anæsthesia or hyperæsthesia. In two-thirds of the reported cases the state of the patellar reflexes is not mentioned. In 25 they were normal, and in 5, including the writer's case, they were absent or diminished. The facts that movements are unimpaired except in so far as they are restricted by pain, and that there is no muscular wasting, tabetic symptoms, or trophic changes of the skin, are characteristic of meralgia. In all cases in which there are symptoms of meralgia, hernia through Hesselbach's triangle should be sought for, since in a case reported by Bähr it produced typical symptoms of meralgia.

See "REVIEW," Vol. II., p. 529.

The Gastro-intestinal Hæmorrhages of New-Born Children.—Dr. J. Audry (*Lyon Medical*, Oct. 27, p. 577).—In the most recent publications these hæmorrhages are confused with hematemesis and melæna. With or without melæna they are rare. In 1896 Milton Lewis could collect only 186 cases from medical literature, and Ribemont gives the proportion of 1 in 100 labours.

The writer thinks that if melæna in infants is rare, intestinal hæmorrhages are less rare. In 100 necropsies on infants who died in crèches he found considerable intestinal hæmorrhages 14 times. The following is a typical case. A child, aged 22 days, was admitted to a crèche for gastro-enteritis but died soon after admission. The necropsy showed that the mucous membrane of the intestinal canal from the duodenum to the beginning of the large intestine was coloured with blood varying from blackish-brown to red. As a rule, on opening the abdomen the external aspect of the alimentary canal shows the presence of hæmorrhage; where the blood is effused the intestine is red and violet. The intestine ought not to be washed before it is opened lest some

small hæmorrhages be overlooked. The site of the hæmorrhage varies; in 14 cases the writer found that the small intestine was almost constantly involved. In one case the hæmorrhage was limited to the stomach. In another case there was much hæmorrhage in the stomach and a little in the small intestine. The upper part of the duodenum is rarely involved. The stomach contained blood in 5 cases; the large intestine in 3, but the blood seemed to have come from the small intestine. The hæmorrhages were always copious; the small intestine was frequently filled with blood.

Writers seem to think that ulcers are frequent. Démelin found them in 45 per cent. of his cases; Milton Lewis 11 times in 68 cases. The writer has seen points as large as a pin-head, ecchymotic or even slightly ulcerated, but never distinct ulcers. On the other hand he has observed without the least hæmorrhage excoriated zones or small ulcers in the course of septic infections, acute gastro-enteritis, or athrepsia. Peyer's patches are frequently very distinct owing to the congestion which gives them a dark or even ecchymosed appearance. The intestinal coats themselves are infiltrated with blood, as in the following case:—A child who had much intestinal hæmorrhage died at the age of 18 days. Histological examination of the intestine showed hæmorrhages in the sub-serous coat. At the base of the villi and between them the veins showed enormous dilatation. Towards the points of the villi there were small intertubular hæmorrhages.

The younger the infant the more easily do these hæmorrhages occur; they are most frequent in the premature and debilitated, whose skin and mucous membranes desquamate easily. Dieulafoy, Cornil, Guyon, and others have described gastro-intestinal hæmorrhages with insignificant lesions in adults. The majority of the infants who succumbed showed primarily the symptoms of simple gastro-enteritis; this became transformed into hæmorrhagic gastro-enteritis.

Behrend and Mracek have studied a hæmorrhagic form of hereditary syphilis. One of the writer's subjects belonged to this category. He died with symptoms of severe jaundice, purpura, and intestinal hæmorrhage. The macroscopic and microscopic appearances of the liver were in favour of the diagnosis of syphilis.

SYMPTOMS.—Usually the hæmorrhage is a post-mortem discovery, for the symptoms are generally those of acute gastro-enteritis. The stools are usually green or yellow, occasionally tinted red or black. The writer has in 5 cases noticed marked cyanosis. In fatal cases the temperature was subnormal towards the end.

As to treatment saline injections are recommended; the application of ice cannot be borne by such infants.

Clitoris Crises in Locomotor Ataxy.—G. Köster (*Münch Med. Woch.*, Jan. 29, p. 169).—Tabetic crises affecting the genital organs are rare, and clitoris crises have hitherto been described only by a few French and Italian writers. A married woman, aged 49, who had probably had syphilis (she had several miscarriages, but no living children), had suffered from locomotor ataxy for 20 years. There had been spontaneous fracture of the right thigh and repeated laryngeal crises in the form of a suffocating cough. The clitoris crises had been present about 10 years. About every 4 weeks, generally during the menses, and at night-time, a pleasant tickling sensation was experienced, without apparent cause, in the vagina, which spread to the vulva and lead to erection of the clitoris. It became more and more intense until the orgasm and discharge of vaginal mucus occurred. The orgasm was immediately followed by cutting and shooting pains in the bladder, uterus, or vagina, which radiated towards the back and usually persisted for some hours. The clitoris crises persisted after the menopause and after vesical

symptoms had appeared. They were usually preceded by the involuntary passage of small quantities of urine. The genital organs, except for senile atrophy, were normal.

Persistent Hiccough and Ptyalism.—Brissaud and Brècy. (*Gaz. Heb. de Med. and Chirurg.*, Nov. 14, p. 1081).—A mason, aged 32, had persistent hiccough accompanied by excessive salivation. Six years before he had a similar attack of hiccough, which lasted 3 days without salivation. He awoke one morning with hiccough, his mouth was full of saliva, and he had to expectorate constantly. Hiccough occurred every 5 or 6 minutes with or without flatulent eructations. The attacks lasted 5 or 6 hours, and between them was a resting period of an hour or two. Nocturnal attacks, shorter than the diurnal ones, also occurred, and awoke the patient. The excessive secretion of saliva was continuous, but increased after each hiccough. The expectoration filled a spittoon in 3 or 4 hours. The patient said that the saliva had a foul taste. Vomiting, due to swallowing of saliva frequently occurred, particularly in the evening. The vomited matter was almost entirely pure saliva, with occasionally a little food and bile.

The patient was a short robust man with no neuropathic antecedents, and his previous health had been good. There was no sign of any organic lesion. The visual field was normal. Absolute anæsthesia of the pharynx was the only alteration in sensibility. Speech was slow and hesitating. Two years previously a macular syphilitic eruption had appeared and he now had one on the back. There were mucous plaques at the anus. No mercury had been given. He recovered under rest, nourishing food and tonics. The writer regards the case as hysterical.

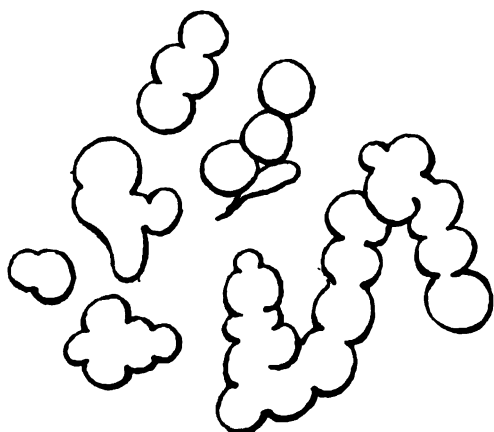
THERAPEUTICS.

The Dietetic Treatment of Epilepsy.—Balint (*Ungar. Med. Presse*, Aug. 10, p. 474), Toulouse and Richet have recommended a diet poor in chloride of sodium, because bromine can replace the chlorine in the organism, and they thought that patients on such a diet would be more susceptible to the action of bromine. ("REVIEW," Vol. III., p. 175). The daily food consisted of 1 litre of milk, 300 gm. of meat, 300 gm. of potatoes, 200 gm. of flour, 2 eggs, 50 gm. of sugar, 10 gm. of coffee, and 40 gm. of butter, the total amount of common salt contained in this diet being about 2 gm. Patients, however, soon tire of saltless food. The writer substituted a strict milk diet, but this had the additional disadvantage of causing constipation. He then had bread made in which a preparation of bromine was employed instead of sodium chloride. The daily allowance consisted of 1 to 1½ litres of milk, 40 to 50 gm. of butter, 3 eggs (without salt), 300 to 400 gm. of the bromated bread, and fruit. This amount represents 2,300 to 2,400 calories and is quite sufficient to maintain nutrition, and contains 3 gm. of bromine and little more than 2 gm. of sodic chloride. After 6 or 7 days of this treatment the epileptic attacks invariably diminished in number and intensity, and in a few cases ceased entirely. Thus one patient had always required 3 attendants to protect him from injury; on the eleventh day of treatment the fits were replaced by slight tremors. Of 9 recent cases the fits ceased entirely in 7; of 19 cases of long standing in 15. If the fits did not cease they invariably became slighter. In proportion as the fits diminished the general and mental health was restored. The treatment was continued as a rule for 30 to 40 days. If then discontinued the attacks usually returned but probably a more permanent result would follow a more prolonged course. Though the organism is more susceptible to the action of bromine when deprived of

chlorine, it is not so liable to bromism for symptoms were never observed though the diet was continued for several months.

Fanghi di Sclafani in Acne rosacea.—Von Fleischl (*Wien. Klin. Woch.*, Dec. 5, p. 1204).—Fanghi di Sclafani is an earth of volcanic origin found in Sclafani in Sicily. It is a bright, greyish-yellow, finely-divided powder, which consists microscopically of prismatic crystals and small yellow amorphous clumps; it also contains tiny stones, remains of beetles, macerated leaves, and splinters of wood. Its chief constituent (80 per cent.) is sulphur, more finely divided than in any other form (Figs.), and completely soluble in bisulphide of carbon. The mineral remains after the extraction of sulphur are the sulphates of strontium, barium, iron, and calcium, and silicates of aluminium, iron and magnesium, free sulphuric acid, and an acid organic substance probably containing humic acids. The sulphates of iron and aluminium, the free sulphuric acid, and part of the organic matter are soluble in water, and constitute 5.47 per cent. of the total mass.

As much as will go on the point of a pen-knife (about gr. ⅔) of this earth is placed in a small porcelain dish, provided with a lid, and about half a drachm or a small teaspoonful of water is added. Every evening the mixture is stirred with the finger and applied to the affected part on the finger tip. In the morning the dry powder left by evaporation of the water is washed off and the part carefully dried without rubbing. Stronger mixtures are to be avoided, for they may produce dermatitis; the writer has never seen this with the above proportions. The duration of the treatment is from a fortnight to several months, according to the severity of the case. Very advanced cases are unsuitable for the treatment, but many of those in which there are some nodules and many dilated vessels, and which



1.

Purified Sublimed Sulphur.



2.

Precipitated Sulphur.



3.

Fanghi di Sclafani.

would be usually treated by scarification and division of the vessels, may be completely cured by Fanghi di Sclafani alone, in spite of the persistence of digestive or sexual disturbances. The writer has no experience of its effect in alcoholic cases.

CASE 1.—A single lady, aged 40, had had acne rosacea for 20 years; there were many dilated capillaries over the nose and cheeks. She had been treated by various specialists without benefit. After a fortnight's treatment by Fanghi di Sclafani she was completely cured, and 5 years later there had been no relapse, although obstinate constipation continued.

CASE 2.—A single lady, aged 25, had suffered from acne rosacea for 5 years, which affected the nose and most of the forehead, over which were scattered about 40 nodules. There were no pustules of acne vulgaris. After 5 years' continuous but unavailing treatment, Fanghi di Sclafani was ordered. In 6 weeks the redness had disappeared, and some time later there was no trace of the disease. Fifteen years later there had been no relapse, although chronic constipation was present.

CASE 3.—A woman, aged 32, had had acne rosacea of the nose and cheeks for 2 years.

There were 3 or 4 nodules. Complete cure followed 6 weeks' treatment.

The superior results obtained with Fanghi di Sclafani compared with other preparations are probably due part to the exceedingly minute subdivision of the sulphur contained in it (Fig.), and partly to the fact that after maceration of the skin by the water, and the soluble constituents, the sulphur acts more energetically. The preparation can be obtained in Italy at many druggists, and costs about 8 shillings a kilogram.

The Treatment of Sarcoma by the Röntgen Rays.—Carl Beck (*Münch. Med. Woch.*, Aug. 6, p. 1284).—A powerful man had had a black spot (possibly a birth-mark) on the left external malleolus for about 15 years. This became verrucous, increased in size, and in Nov. 1900 was tender. Ulceration occurred, and at Christmas the growth had attained the size of an apple. It was hard, of a greyish smoke colour, and appeared to consist of a number of smaller warts. It was adherent to the bone. In the inguinal region was an enlarged gland of the size of a pigeon's egg. Amputation was refused. The writer, therefore, removed the tumour with

the periosteum and the inguinal gland. The tumour proved to be a melanosa sarcoma. Six weeks later the growth recurred; it was flatter and wider, and was surrounded by bluish nodules, not unlike hæmorrhoids. There was a mass of inguinal glands of the size of a goose's egg. The tumours and glands were again removed. Four weeks later there was again recurrence. The growth was covered with dark blue readily bleeding nodules, the inguinal glands were again enlarged, and there was a number of nodules on the inner side of the calf, varying in size between a pin's head and a cherry. The growth over the malleolus was again extirpated. The structure was alveolar with pigment both in the cell-nests and the connective tissue cells.

The wound left after the extirpation was at once treated by the Röntgen rays. Seven applications were made, at intervals of 2 or 3 days, the first lasting 10, the last 45 minutes. Six weeks later there was no sign of recurrence over the malleolus, and a number of melanotic nodules on the calf, near the malleolus, (apparently these had not been removed at the third operation) which were exposed to the rays had either completely cicatrised or had diminished in size. In the meantime the inguinal tumour steadily grew. The writer, therefore, removed this 9 weeks after the tumour on the malleolus, and treated the region of the wound with Röntgen rays. Nine weeks after removal of the tumour over the malleolus the wound had completely cicatrised, and there was no recurrence. At the time of writing the X-rays were still being applied to the inguinal region.

The writer, although not sanguine as to the ultimate result, considers that the facts that there has been no return of the growth since the rays were employed, though after the previous operations recurrence was rapid and constant, and that some typical sarcomatous nodules had atrophied or cicatrised without operative interference, warrant further trial of the method. When combined with the removal by the knife

it promises the best results. It is often impossible to tell to what extent the growth has penetrated apparently healthy tissue, and the rays may destroy malignant tissue unwittingly left behind. The dangers of a strong current and long exposure should be explained to the patient, for feeble currents are useless.

The writer has also seen a case of epithelioma, which was cured by the Röntgen rays alone.

Postural Treatment of Phthisis.—Arthur Schenk (*Wien. Med. Woch.*, July 6, p. 1311, and July 13, p. 1361), has applied the principle of Bier's treatment of arthritis to the treatment of pulmonary phthisis. Rokitsansky observed that phthisis is rarely found in cases of heart disease, in which the pulmonary circulation is impeded, whereas death from tuberculosis is the rule in pulmonary stenosis. Bier, therefore, produced passive congestion of joints by applying an elastic bandage above them and obtained excellent results. Some authorities consider that tubercle bacilli do not thrive in hyperæmic tissues; others believe that the congested circulation prevents the removal of bacterial toxins, which, therefore, accumulate round the bacilli and eventually destroy them. Bier believes the chief factor in the treatment is the production by the passive hyperæmia of an increased formation of fibrous tissue and consequent cicatrization.

According to Benecke a congenital predisposition to pulmonary tuberculosis depends on two anomalies, firstly an abnormally small heart, and secondly abnormally large lungs. This combination renders an adequate supply of blood to the lungs impossible. Acquired predisposition depends on malnutrition from any cause and the resulting anæmia. The especial predisposition of the apices is due to the mechanical fact that they are more liable to anæmia from a poor supply of blood. Combining the observations of Rokitsansky and Benecke the chief aim in the

treatment of phthisis should obviously be to increase the amount of blood in the lungs and especially in the apices. This is attained most readily by posture. The foot of the bed—or better of a specially constructed couch—is raised, so that the head is on a lower level than the feet. The lower the head the more rapidly does cicatrization advance. Anæmic patients find the position grateful, but those who complain of headache should wear an ice-cap or Leiter's tubes. In this way passive pulmonary hyperæmia is produced. In dry weather the patients should lie in this position out of doors the whole day; in bad weather in a warm room with dry air. Damp air is very detrimental to phthisical subjects, since it diminishes respiratory exosmosis. At night the bed is placed in the same position. Thus the patients are semi-inverted practically continuously, except at meal times.

The action of posture is assisted by hydrotherapeutic measures. Each patient wears a vest, which is constructed of a number of small india-rubber tubes and covers the chest completely. Through these tubes a constant flow of water at 111° or more is made to circulate. This produces a lasting dilatation of the vessels, whose natural elasticity might neutralise the mechanical action of posture. The determination of blood to the heated thorax is further increased by producing contraction of the superficial blood vessels of the rest of the body. In summer the patient is covered merely by a thin sheet, and an attendant wipes the hands, feet, and abdomen every 5 minutes with a sponge dipped in cold water, which is then allowed to evaporate. These measures are said to be greatly appreciated by patients. The increased blood supply in the

thorax produces increased local metabolism and the symptoms rapidly improve. It is very important to enable the heart to deal with the increased amount of blood in the lungs. After a few days' treatment a systolic murmur usually appears at the apex with accentuation of the pulmonary second sound. Whenever this occurs a separate pad made of india-rubber tubing should be placed under the "vest" over the heart, and a constant supply of cold water made to circulate through it. This is preferable to the exhibition of digitalis and causes rapid disappearance of all signs of heart failure. The treatment also greatly facilitates expectoration. At night the secretions gravitate from the small bronchioles towards the larger bronchi, and on waking are expectorated. During the day cough and expectoration are diminished. The effect of posture is heightened by the sedative action of the air warmed as it enters the bronchi. Thus the exhibition of morphine or codine is often obviated.

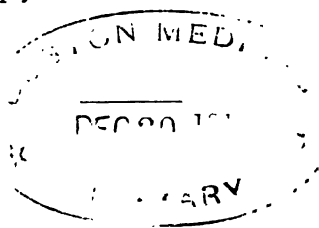
See also "REVIEW," Vol. II., p. 237. "Treatment of Phthisis by Active Hyperæmia."

Trichloracetic Acid in Hay Fever.—Henry Krause (*Therapeut Monatshefte*, May, p. 275), of New York, has treated more than 30 cases of hay fever during the past 2 years with the following lotion:—

Acid. trichloracetic	...	1
Aquæ destill.	...	100

To be sniffed, injected, or sprayed up the nostrils 2 or 3 times a day.

All the patients were cured in from 2 to 8 days.



SURGERY.

Strangulation of the Stomach.—Dr. Hector Mackenzie and Mr. W. H. Battle (*Lancet*, Dec. 7, p. 1582).—A man, aged 30, was admitted to St. Thomas' Hospital on April 15, 1901, in a state of collapse. To revive him 3 pints of saline fluid and brandy had to be injected into the veins. The eyes were sunken and the body was emaciated. He complained of pain in the upper abdomen and was frequently sick, bringing up small quantities of watery fluid. His thirst was great. The abdomen presented a curious appearance, being boat-shaped and the wall being retracted throughout. There was epigastric tenderness, especially to the left of the middle line. The bowels had not acted for 6 days. There was a scar on the left side of the chest in the anterior axillary line, from a stab with a poinard 7 or 8 years ago. It was said that the lining of his stomach was exposed. No trouble was experienced until 3 years afterwards when he had an attack of pain in the left side of the upper abdomen and severe vomiting. Three years before admission, he had an attack like the one from which he was suffering, there being vomiting, collapse, and pain in the wounded region. He had also had slighter attacks of vomiting.

He was too far collapsed for any operative measure. The vomiting and thirst continued, he was excited and restless, placed his fingers in his throat to make himself more sick, and asked for a large quantity of water to aid the vomiting. The temperature was 96° and the pulse was hardly perceptible. There appeared to be some fulness under the left lower ribs, but no dullness. His condition was desperate, but it was thought best to give him the chance of operation, although another saline injection of 3 pints was required before anything could be done. This rapidly improved the pulse.

An incision was made under the left costal margin commencing 2 inches to the left of the middle line and extending outwards for 4 inches. The intestines were found collapsed and empty except the colon and sigmoid flexure, which contained scabala. The descending colon passed upwards beyond the spleen and was traced to an opening in the diaphragm from which it was easily withdrawn. To the margin the omentum was adherent. After a continued search for the stomach the pylorus was felt to the inner side of the opening in the diaphragm, and the greater part of the organ which had passed through was released and reduced into the abdomen by alternate traction on different parts. There was a distinct mark of constriction where the stomach had been nipped by the opening, and the hernial part was thickened, oedematous, and congested. The stomach showed no tendency to re-enter the space from which it had been withdrawn. In consequence of the patient's state the question of radical cure was not seriously considered. The abdominal wound was quickly sutured. One-third of a gr. of morphine was given subcutaneously, and a pint of saline fluid was administered per rectum.

Pain and vomiting ceased directly after the operation, and the intense thirst was relieved by drinking at frequent intervals and by the administration of normal saline enemata. He was very excitable and had to be watched. The temperature continued subnormal. On the 18th he was more restless and excited, loudly affirming that he intended to die, and he even began to practise the act as he thought it should be done. He would throw his head back on the pillow, stiffen his limbs, close his eyes, let the lower jaw fall, and hold his breath. He died on the 19th.

The extreme depression of the temperature is remarkable, as is shown by the following record: April 15th, evening, 95°; 16th, morning, 96°, evening, 96·6°; 17th, morning, 96°, evening, 95·4°; 18th, morning, 96·4°, mid-day, 95·2°, evening, 96·6°; and 19th, morning, 96·2°.

NECROPSY.—The upper abdomen showed plastic peritonitis, most intense where the stomach was in contact with the liver; here was a large patch of yellow lymph. On the anterior surface of the stomach to the pyloric side of its mid-line was an indurated red line which probably indicated where the organ had been incarcerated in the opening in the diaphragm. The hernia of the colon seemed to have been quite recent and not strangulated. The peritonitis was thought probably due to the passage of organisms from the stomach at the line of strangulation. Pleurisy was present on both sides, chiefly on the left, and the lower lobe of the left lung was solid from septic pneumonia.

This case is one of the few examples of diaphragmatic hernia submitted to operation in this country and illustrates the clinical course of strangulation of the stomach. In nearly every case of strangulation of the stomach through an opening in the diaphragm there has been some complication, either of recent injury or strangulation of intestine in the sac. Here there was intestine in the hernia, but it was not strangulated. Many years ago Sir S. Wilkes drew attention to the occurrence of excessive thirst in cases in which the stomach had passed into the pleural cavity as a result of recent rupture of the diaphragm and considered it an important symptom of strangulation of the stomach. In the present case it was a prominent symptom. It is to be expected, for hardly any fluid can enter the system on account of the frequent vomiting and diminished area of absorption. The other symptoms are pain in the upper abdomen, urgent vomiting, rapid emaciation, a boat-shaped abdomen, constipation, and oliguria. There may be evidence of displacement of the lung and the heart, with dyspnoea, dulness, or

hyper-resonance of the left chest, and other signs of a protrusion of abdominal contents into the pleura. In this case abnormal chest signs were wanting.

A similar case has been recorded by Dr. C. D. B. Hale, and Dr. J. F. Goodhart, "Transact. of the Clinical Soc.," vol. xxvi., p. 105. The patient was well until a few months before death. The symptoms at first were waterbrash, acid eructations, and occasional vomiting. Later he complained of heat and pain at the ensiform cartilage and constantly brought up mouthfuls of dark-coloured mucus. At intervals of a week or 10 days he vomited enormous quantities of a similar fluid. The bowels were obstinately confined. When the diet was limited to peptonised milk the vomiting ceased for a month but then returned as copiously as ever. Emaciation was rapid and extreme. Tympanitic resonance extending posteriorly as high as the middle of the left scapula and retraction of the abdomen were the only abnormal signs. Carcinoma of the stomach was suspected. At the necropsy the heart and lungs occupied their usual positions. Only a small part of the cardiac end of the stomach was in the abdominal cavity; the remainder, with a piece of the splenic flexure, had entered the thorax through an aperture between the crura of the diaphragm. The stomach was enormously dilated and lay in the posterior mediastinum across the spine and on the bottom of the left pleura. The hernial contents lay in a distinct sac immediately above the diaphragm, and consisted of two-thirds of the stomach, a large loop of the transverse colon, the lesser omentum, the greater part of the pancreas, and the duodenum.

Lerminier described a case in which death took place on the tenth day of illness. The pain was in the left chest and respiration was difficult, whilst the patient suffered from a burning thirst (*soif brûlante*). The necropsy showed that the stomach with much omentum had passed into the left pleura. Dr. R. Macnab, published the case of a girl, aged 15, who developed symptoms 3

years after operation for empyema. There were violent sickness and retching, and marked retraction of the abdomen, but not much pain. She improved after the first attack of vomiting but got worse again. She lived from the Tuesday to the Friday, and on the third day vomited coffee-ground material; she died in a state of collapse. The whole stomach with much omentum had passed through the opening.

Death from Injection of Cocaine into the Spinal-Canal.

—F. Legueu (*La Presse, Méd.*, Nov. 9, p. 266).—CASE 1.—A man, aged 54, was seized with deafness in the street, lost consciousness, and fell to the ground. After some hours he recovered, but the same day he was again seized, and he remained unconscious all night. The tendon of the left triceps muscle was found ruptured, and operation was necessary. As he had an engorged face, emphysematous lungs, weak heart, and atheromatous arteries, the administration of chloroform was considered inadvisable. Though he was also a bad subject for cocaine anæsthesia it was decided to use this drug. Lumbar puncture was performed, and a few drops of cerebro-spinal fluid were drawn off. A little less than 2 c.c. of a 1 per cent. solution of cocaine were injected, and the patient lay down. Ten or 12 minutes afterwards the operation was commenced, the patient being quite calm and feeling nothing. As the ruptured tendon was being exposed he complained of suffocation, asked to be raised, and moaned several times. He was placed in a sitting posture, his head gave some convulsive quivers, and he fell back dead about 15 minutes after the injection. A necropsy was refused.

CASE 2.—A man, aged 61, had a strangulated hernia for 48 hours. His general condition was bad. He had had only one attack of vomiting, but the face was ashen, the nose was pinched, the lips were discoloured, and the limbs were cold and moist. The pulse was 140 and small.

Lumbar puncture was performed in the third space, and 1½ cgm. of a 1 per cent. solution of cocaine were gradually injected. As the field of operation was being prepared the respiration became embarrassed and he vomited twice. The face became pale, the forehead moist, and respiration suddenly ceased. Two injections of ether were given and oxygen was administered. Death occurred 12 to 15 minutes after the injection, before anæsthesia was established.

NECROPSY.—There was a strangulated left inguinal hernia. The heart was normal except for two small atheromatous patches at the base of the mitral valve and slight atheroma of the aortic valves. The lungs showed some old adhesions, and were congested, especially the right one. There were a number of infarcts and some tuberculous areas. There was some enlargement of bronchial glands, but not enough to compress the vagus. The left kidney contained two cysts but was otherwise healthy.

In the cranial vault were great adhesions of the dura mater, but no meningeal or cerebral lesion. The arteries were remarkably elastic. Death was probably due to syncope from the direct action of the cocaine on the medulla.

The Antiseptics of Catheterism in cases of Enlarged Prostate.

—G. Buckston Browne (*Lancet*, Nov. 23, p. 1595) provides the patient who requires to use the gum-elastic or rubber catheter with the following outfit—a tube of antiseptic pellets (one of which dissolved in a pint of boiled water yields a solution of 1 in 1000 of perchloride of mercury); a pint bottle; a glass tube 13 inches long and 1¼ inches in diameter, fitted with a cork and stand; a box divided into 7 compartments, each holding a catheter and labelled after the days of the week, made of cheap material so as to be burned when soiled, and easily replaced, or of tin, and therefore easily purified by boiling; and a pot of plain white vaseline or vaseline containing 5 per cent. of oil of eucalyptus. The patient is directed to keep in his

bedroom a vessel with a lid, filled with water which has been boiled, and a supply of clean, small, soft, rough towels, so distinctive that they will not be used for ordinary purposes. He dissolves a pellet in the pint bottle filled with boiled water, and with this he fills the upright glass tube. He uses a catheter at bed-time, wipes it, washes it in soap-and-water, and places it in the upright tube for the night. The inside is thus thoroughly exposed to the antiseptic solution, and there is no need to have the interior smooth and polished, as has been proposed, which increases expense. The catheter is taken out in the morning, rinsed in water which has been boiled, dried, and put away in the 7-compartment box until its day for use comes round. If a catheter is required 4 or 5 times in 24 hours it can, after each introduction, be washed and put back into the tube during the day of usage, although simple washing during the day is sufficient if the catheter is given its antiseptic bath at night. Men engaged during the day away from home and travellers carry 2 or 3 or more clean catheters in little metal boxes (which can be boiled) in their pockets, transferring the catheters when used to another pocket, and waiting until evening and their bedroom is reached before washing them all, and placing them in the antiseptic solution. One tubeful of perchloride solution will purify five or six well-washed catheters. Gum-elastic catheters by good makers will bear well 12 hours' immersion in 1 in 1000 of perchloride of mercury, and carefully used in this way will last years. Vulcanised indiarubber catheters may, if desired, be left in the solution altogether without injury. The receptacle for the lubricant employed should be small, so that the latter is frequently renewed, and the former should be frequently cleaned. The glans penis must be kept clean with soap-and-water and the hands well washed. If these simple directions be carried out the urine will keep sweet and clear and cystitis will never be produced. All metal

instruments, such as silver catheters and vesical and urethral sounds, should be boiled. No prostatic patient should be touched by any instrument which is not aseptic. After one impure contact the patient may never be the same and this may be the starting point of almost endless trouble.

Peri-Auricular Adenitis.—Erwin Jürgens (*St. Petersburg. Med. Woch.*, No. 41, p. 355).—The diagnostic importance of the lymphatic glands in the neighbourhood of the auricle is not sufficiently recognised. Adenitis of the glands over the mastoid process has been mistaken for mastoiditis or periostitis, and has led to a healthy mastoid being trephined. The causes of enlargement are : (1) infective processes, in which enlargement of the mastoid or other glands is merely an incident ; (2) local lesions, traumatic or otherwise of the neighbouring scalp ; (3) lesions of the tympanum. The last cause is but little known. Urbantschitsch mentions mastoid adenitis only to emphasise the possibility of mistaking it for mastoid periostitis, and gives no hint that it may be the result of otitis media (*Ohrenheilkunde*, 3rd Ed., p. 385) ; he states, however, that the lymphatic glands below the lobule may enlarge in myringitis (p. 173). The researches of Gruber and Kessel prove, however, that the lymphatics of the mucous layer of the tympanic membrane penetrate the lamina propria and join those of the skin of the external auditory meatus in the cuticular layer. These lymphatics follow the periosteum of the external meatus to the mastoid process, and also join the cervical lymphatics. According to Merkel and Rauber the superficial lymphatics of the external auditory meatus and of the pinna join the lymphatic glands over the parotid gland (pre-auricular glands) and the sub-auricular glands, while the deeper lymphatics join the superficial cervical glands in front of the sterno-mastoid, some of

which frequently lie over the mastoid process. There are also communications between this system of lymphatics and the chain of glands behind the sterno-mastoid muscle. It is, therefore, obvious that the middle ear communicates directly with the mastoid and sub-auricular glands, which, as would be anticipated, enlarge in a large percentage of cases of otitis media. In acute purulent otitis media with consecutive acute adenitis, it is often difficult to decide whether the pyrexia is due to the adenitis or the otitis, or to both. This question is of great importance. Tenderness and redness over the mastoid with pyrexia and otorrhœa may closely simulate mastoid disease, but be caused by otitis media with secondary mastoid adenitis. The presence of other enlarged glands in the neighbourhood is in favour of a glandular origin of the mastoid tenderness. Acute otitis media may occasionally produce few symptoms and run its course without causing perforation of the membrana tympani. If the mastoid glands then become swollen and inflamed they may appear to be primarily diseased. Leutert (*Arch. f. Ohrenheil.*, Bd. 46, Hft. 4 and Bd. 47, Hft. 1) has proved that bacteria may penetrate from the throat into the tympanum without producing otitis; they may then be absorbed by the tympanic lymphatics, invade the peri-auricular glands, and produce an apparently primary acute adenitis with high fever, great pain, and tenderness. In children the evening temperature may often reach 105° ; as a rule it sinks almost to normal in the morning. The result is usually a glandular abscess. In uncomplicated cases the temperature becomes permanently normal with the subsidence of the adenitis. Any remaining glandular enlargement is best treated by inunctions of equal parts of iodide of lead ointment and lard. Peri-auricular adenitis is never fatal unless complicated by serious middle ear disease. Primary adenitis in this position has been described but probably does not exist.

Treatment of Difficult Strictures.—G. Buckston Browne (*Lancet*, Nov. 30, p. 1477).—Syme said, and the writer agrees with him, that puncture of the bladder for retention of urine is warranted in military, naval, and country practice; but “when hospital surgeons frequently find it necessary to puncture the bladder the standard of professional skill is low.” After aspiration of the bladder and continued failure to pass a catheter *per vias naturales* the modern surgeon usually performs perineal section after Wheelhouse’s method. But the orifice of the stricture cannot always be found; the most consummate craftsmen have failed. The operator then makes a hit-or-miss incision, hoping to find the urethra behind the stricture. It is not surprising that incisions made in this way sometimes do not heal. The writer has gradually arrived at the conclusion that in cases of difficult stricture the perineum must on no account be interfered with. This has led him slowly to discover *that there are no cases of stricture, however severe, through which it is impossible to pass an instrument*. This is going further than the dictum of Syme, who said that where water came out an instrument ought to go in. When once an instrument has been passed into the bladder it can boldly be withdrawn and replaced by one a size larger; finally, the writer has never met with a stricture which in this way could not be dilated up to No. 6 or No. 7 English. A Civiale’s urethrotome can then be introduced and the stricture divided. The patient in the worst case of stricture may be anæsthetised, the stricture dilated up to No. 6, the urethrotome introduced, and the stricture cut to full size and left with a full-sized catheter tied in, all at one sitting.

The writer’s method is as follows: In difficult strictures he has long given up the use of filiform bougies; their use is not true surgery; it is simply blind groping and trusting to good fortune, whereas the surgeon should rely upon his sense of touch. Filiform bougies are dangerous: in the bladder they may break and lead to very

unpleasant consequences. In the passage and dilatation of really difficult strictures the writer has no confidence in any instruments, except steel ones. No silver catheters are strong enough. He prefers finely-polished rigid steel instruments, which will not bend or yield under any proper force and therefore allow of the most exact and accurate manipulation. He uses a set of 16 sounds; each one is two sizes larger in the shaft than at the point, the smallest being No. 2 in the shaft and less than No. 1 at the point (marked 0-2), the next being 3 in the shaft and 1 at the point (marked 1-3), and so on up to the largest, No. 17 (marked 15-17). The other instruments required are Civiale's urethrotome, some blunt-ended English gum bougies, varying in size from No. 3 to No. 10, a foot rule marked in inches, and a No. 11 or No. 12 soft gum catheter mounted on a stylet for tying in at the close of the operation. The patient (except in a case of acute retention) has been carefully prepared, aperients have been administered, a bath has been taken, and the rectum has been cleared by a good enema. If an operating table be not available the bed should be made firm and level by placing the leaf of a table or a board under the mattress. The patient's legs are each wrapt up in a blanket and a third blanket is placed across the body; the perineum and pubes are thus left exposed. The patient is then completely anæsthetised. A blunt-ended soft bougie is introduced into the urethra, and the exact distance of the stricture, or in cases of multiple stricture of the anterior stricture, from the meatus is measured. In difficult cases the right-handed surgeon will have to stand on the patient's left, and, with his left finger in the rectum, he will steady and secure the point of the well-warmed and vaselined steel sound as, holding it in his right hand, he attempts to pass it. The finger in the rectum at once tells if the point of the instrument leaves the middle line. No force must be used, but a steady search must be made for the orifice of the stricture and firm but gentle

pressure exerted when it is found. Steal in little by little. After a while the stricture yields, the instrument advances a little, and soon the end is fairly grasped by the stricture. At this moment no attempt should be made to pass the instrument, which is probably the 1-3 or next to the smallest, on into the bladder, at any rate not unless it passes forward quite easily, but it is withdrawn and the next largest one, the 2-4, applied, and then the 3-5. By so doing the orifice of the stricture will be dilated and will not grip and retain the point of the 1-3, which may be taken up again and will now probably pass into the bladder. Then the 2-4, the 3-5, and the 4-6 should be successively passed. The sounds are known to be in the bladder by their shafts being felt to be accurately in the middle line and their points free in the bladder. When once the No. 6 or No. 7 sound has been fairly passed into the bladder it should be allowed to remain in place while the surgeon changes sides. He now stands on the patient's right, draws out the sound, and slips in the urethrotome. If difficulty be found in introducing the urethrotome the sound must again be passed. Sometimes the urethrotome can best be lightly and gently shaken in, as it were, rather than actually directed and passed in. When the bulb of the urethrotome is fairly in the bladder there is a sensation of looseness and freedom quite characteristic, and the surgeon may feel sure that all is right. Nothing should be attempted until the surgeon is satisfied that the urethrotome is really in the bladder. When in proper position the instrument is carefully withdrawn until the bulb is an inch beyond where the stricture is known to begin, the anæsthetist is warned that the patient must be perfectly still for a moment, the blade is then protruded and a free incision is made from behind forwards for a good inch along the floor of the urethra, and about half an inch deep. The blade is then sheathed and the instrument withdrawn. A full-sized sound is now passed, a No. 12 or No. 13, and if, as is practically always the case, it passes easily,

then the larger ones, Nos. 14, 15, 16, and 17, may be passed in succession, and then the soft catheter mounted on a stylet, curved so as exactly to correspond with the curve of the sounds, is passed in, the stylet is removed, and the catheter is tied in. The urine which is in the bladder will issue by the catheter and so show that all is right. Should there be a doubt about the catheter being in the bladder it should be withdrawn and again passed in, and on no account should any water be injected through it until there is no doubt that the catheter is in the bladder. The catheter, usually No. 10 or No. 11 (English scale), is secured in the bladder. Usually the inlying catheter is well borne and is removed in 3 days; in a few cases irritation is set up and the instrument has to be removed.

The writer persuades the patient to bear with the catheter for at least 2 days, as the chances of hæmorrhage are thus much reduced and the pain and sometimes the difficulty of natural micturition are avoided. The patient sits up about the eighth day, and with the periodical passage of 2 or 3 well-warmed well-oiled steel sounds—the largest, usually No. 14 (English)—the case is finished. The patient learns to pass these sounds for himself. By this method he is not subjected before operation to painful, difficult, and often tedious instrumentation, and he is spared the old plan of dilating up the stricture by tying in a series of small catheters, each larger than the one preceding, which is certainly not the best preparation for a part which is to be incised, and above all he is spared a perineal incision, with the slow recovery. There is rarely any important hæmorrhage, and there is no risk of a perineal urinary fistula.

In many cases in which there is no difficulty in traversing the stricture with an instrument, internal urethrotomy is an excellent operation. These cases may be grouped as follows: (1) When time is an object. The patient is perhaps ordered on foreign service, or perhaps on the eve of marriage finds that he is the subject of stricture.

Here it is justifiable to run a little more risk than ordinary dilatation entails in order to get the best and most permanent results in the shortest time. (2) When the stricture is at the urethral orifice or in the penile urethra it will not permanently yield to either continuous or interrupted dilatation, but must be divided. (3) When the gentlest instrumentation is followed by rigor and prostration. If the fibres of the stricture are freely divided the use of a bougie will cease to be followed by rigor. If after internal urethrotomy the use of a bougie is still followed by rigor it will be because the operation has been incomplete, and it must be repeated more thoroughly. Men who have come home from malarious countries often have agueish attacks. Not infrequently this fever is associated with urethral stricture, and the attacks disappear when the stricture is divided. (4) Internal urethrotomy is required when a "resilient" stricture rapidly re-contracts after dilatation. (5) When the deposit round a stricture is obviously large and dense dilatation is useless, and the stricture must be cut, sometimes more than once before a satisfactory result is obtained. (6) When renal or other calculus is impacted behind a stricture, the stricture had better be divided internally, and, if possible, the calculus extracted *per vias naturales*. Should this prove impossible the calculus may be cut down upon and the division of the stricture and subsequent treatment will prevent the opening from becoming fistulous. (7) No urethral fistula will heal as long as the urethra is contracted in front of the fistulous urethral orifice. Divide the stricture and keep it open by periodical instrumentation, and usually the fistula will close. (8) As age advances the troubles of stricture may be complicated by those of prostatic hypertrophy, making it necessary for the patient to pass a part, or the whole of his urine by catheter. To do so he must have a patent urethra, and as stricture tends to tighten in elderly people, many of these patients find increasing difficulty in passing a catheter of reasonable size.

Conjunctivitis and Retinitis from the X-Rays.—Dr. J. W. Sherer (*New York Med. Jour.*, Sept. 21, p. 543).—A medical practitioner, aged 29, who had been daily exposed to the X-rays for $3\frac{1}{2}$ years, was seen on Oct. 11. About 6 months previously his eyes became sensitive to sunlight, and the ocular muscles were unduly fatigued by near work. Slight conjunctivitis appeared just before he came under observation. The discs were slightly blurred and the fundi abnormally red, but vision was normal. Under the use of a 1 per cent. solution of nitrate of silver the conjunctivitis quickly yielded.

On Nov. 10 desquamative dermatitis, accompanied by bronzing had appeared on the face—a condition characteristic of the action of the X-rays. The eyebrows and eyelashes had been almost completely lost. The conjunctivitis had recurred on the lower lids. The fundi were much more congested and reddened. The discs were blurred. The eyelids were protected by steel plates with plate-glass windows. In about a month the conjunctivitis and retinitis disappeared. Nine months later the fundi were normal, and the eyebrows and eyelashes were growing, and there was only a trace of conjunctival redness.

Three cases of cancer in the ocular region were treated by the patient with the X-rays in which 75 sittings were given, but irritation of the eye occurred in only one. In a fourth case in which 37 severe applications were made, ulceration of the cornea occurred.

Dr. King of Toronto has recorded a case of conjunctivitis, loss of eye-brows and eyelashes, desquamative dermatitis, and exfoliation of the hair and nails from the X-rays.

Spontaneous Rupture of Intestine.—T. Carwardine, M.S., F.R.C.S. (*Lancet*, Dec. 14, p. 1669).—Rupture of the intestine from peristalsis, of which the following case is an example, is rare. A man, aged 50, complained of difficulty and straining in the passage of motions, which were chiefly soft or liquid. He looked well, and his abdomen was soft and lax. An annular carcinomatous stricture of the rectum was found

some inches from the anus. The lumen just admitted the forefinger. Colostomy was proposed and the patient was kept in bed for some days. Preparatory to the operation he was given a colocynth pill which acted twice the same night. Next morning he was rather cold and in a good deal of pain. At 11.30 a.m. the nurse said he "got a fearful spasm." The abdomen was hard and distended. He was cold, livid, and collapsed, and remained so till the early afternoon, when he died in great pain.

NECROPSY.—The peritoneum was full of soft, liquid fæces. In the sigmoid flexure, some 6 inches from the stricture, was a rent about $1\frac{1}{2}$ inches long, having a longitudinal direction and situated opposite to the mesenteric attachment. Its edges were clean-cut and there was no sign of ulceration or inflammation in the bowel around. The intestine had evidently ruptured during peristalsis, although there was no complete obstruction. The appearances were strikingly different from those of perforation of ulcer produced by obstruction.

The Prevention of the Removal of the Intubation Tube by the Child.—Schlechtendahl (*Münch. Med. Woch.*, April 30, p. 706).—After intubation the silk thread projects between the teeth and is usually fastened to the cheek or behind the ear with strapping. It is then conveniently situated for the child to seize and so to abstract the tube; frequently also the silk thread is bitten through. The writer proposes to pass a Bellocq's sound through the nostril and, having fastened the cord attached to the tube to the spring which projects forwards in the mouth, to withdraw the silk through the nares from behind forwards. The cord is then cut short at the anterior nares in which it is fastened by strapping attached to the ala nasi or by a plug of cotton wool. The danger of the silk being bitten through is entirely obviated and it is practically impossible for the child to secure it and so to withdraw the tube. To extract the tube it is first necessary to pass the finger to the back of the pharynx and hook it round the silk.

OBSTETRICS AND GYNÆCOLOGY.

Spontaneous Rupture of an Apparently Normal Uterus at the Commencement of Labour.

—Dr. R. Milne Murray (*Lancet*, Dec. 21, p. 1737).—Spontaneous rupture may occur in certain abnormal conditions of the uterus, such as the bicornous uterus, the myomatous uterus, or in a uterus which has previously been the subject of a Cæsarean operation. Krukenberg has collected 13 instances from the last cause, and Rose and Mundé have recorded a case in which the uterus ruptured spontaneously in 4 successive pregnancies. Lastly, there is a very small number of cases in which rupture occurred at the beginning of labour in a uterus of normal conformation and in which there was no gross complication. Such cases have been recorded by Ingersley, Hofmeier, and Professor A. R. Simpson. In 2 nothing abnormal could be found, and the histological examination revealed nothing to account for the accident. In Simpson's case the muscular fibres showed a marked fatty degeneration. To this group the present case belonged.

A woman, aged 27, was pregnant with her fifth child. Pains began about 11.30 p.m., and at 2.30 a.m. she sent for a medical man, to whom she complained of severe pain, especially at a spot midway between the umbilicus and the left anterior superior iliac spine. He could not hear the foetal heart and he noticed the tenseness of the uterine tumour and its marked deflection to the left. There seemed to be no contraction sufficient to account for the pain complained of. On vaginal examination there was no sign of a presenting part; the finger could not be passed through the os and the cervix was not taken up. On further examination the foetal parts could be felt with unusual distinctness at the upper part of the tumour. Extra-uterine gestation was suspected.

When the writer saw the patient she was in a state of profound collapse. On vaginal examina-

tion under chloroform the finger was passed through the os and the cervix was found only partially taken up. The lower uterine segment was empty and in the left side a rent in the wall could be felt, through which the finger passed into the abdominal cavity. Abdominal section was performed and the foetus and placenta were extracted. The rent in the uterus involved the left upper region of the bladder. There was alarming hæmorrhage from the tear in the uterus and the proximal end of the torn uterine artery. The uterus was removed and the rent in the bladder was closed by several fine catgut stitches. Owing to the state of the patient the operation was rapidly completed without any peritoneal toilet. Recovery followed. No cause for the rupture could be found. To the naked eye the uterus presented no abnormality; microscopically a portion taken from the end of the rent was perfectly normal without any suggestion of a fatty change.

Vomiting of Pregnancy with Purpura Hæmorrhagica.

—(*Glasgow Med. Jour.*, Dec., p. 401).—A woman, aged 19, was admitted to the Glasgow Maternity Hospital on June 14, with persistent vomiting, which had commenced in Jan., but had been much more severe since the end of May. Since about May 28 she had rejected everything except a little water. She considered herself in the seventh month of pregnancy. Her health previously had been excellent.

She looked collapsed, sallow, and emaciated. The pulse was about 120, regular, and of fairly good tension; the temperature was 99°. The urine was scanty, dark-coloured, and muddy, and had a peculiar sweetish odour. It contained a trace of albumin, pus cells, epithelial débris, and granular tube-casts. A little egg-flip

and brandy were given, but were immediately rejected. Rectal feeding with milk, brandy, and beef-peptonoids was commenced. The enemata were retained. Next day 10 gr. of oxalate of cerium and 15 gr. of bismuth subnitrate were given three times, but the first two doses were rejected. As little urine was excreted, 25 oz. of saline solution were infused under the right breast. That evening the temperature, which had been subnormal since the day after admission, rose to 101.4° ; next morning it fell to 97.8° . On the evening of the 18th, it rose to 103° , but it quickly fell to normal again. By the 19th she had improved considerably. The sickness had nearly ceased and she was able to take milk and lime water, and brandy and ice. The foetal heart sounds could not be heard.

On the 20th a rash began to appear on the extensor surfaces of the elbows, hips, and knees. It quickly became purpuric and general. The gums, also, began to bleed readily. Hæmatemesis began on the evening of the 21st, and feeding by the mouth was stopped. The pulse became much weaker, and tremor of the hands was noticed. Her face became cyanosed, and she appeared to be drowsy. The coagulation time of the blood was $10\frac{1}{2}$ minutes—about double the normal time. Urobilin was found in the urine. Suprarenal tabloids of 5 gr. were given thrice daily. On June 23 hæmatemesis occurred twice. Hypodermic injections of 5 minims. of liq. strychn. were given every 6 hours. On June 24 there was a slight vaginal discharge, and the os was partially dilated. Labour was going on, but the patient maintained that she felt no pain. In a few hours a dead foetus was delivered by the breech. There was no post-partum hæmorrhage, but as a preventive an intra-uterine douche of 2 pints of water, containing 30 gr. of suprarenal extract to the pint, and a hypodermic injection of ergotin and strychnine were given. Two pints of saline solution were infused into the abdominal wall. The pulse was very feeble and rapid. On June 25 vomiting recurred several times and hiccough took place

at intervals; the pulse was almost imperceptible. She lay with half-closed eyes. The rash had faded much. Muscular tremor was marked. Death occurred at 10.45 p.m. During the last hour there were unconsciousness and Cheyne-Stokes respiration.

The necropsy revealed only an abscess in the pelvis of the right kidney. The writer does not think this had anything to do with the condition.

In the uncontrollable vomiting of pregnancy, when medicinal treatment fails, labour is usually induced. The writer's results have not been good, because the patients have too often been so far reduced that they sank from exhaustion after delivery. In this case the woman was so weak that he thought she would have a better chance if she were first strengthened by rectal alimentation. She improved, but on the appearance of the purpura rapidly grew worse. Then it was thought that induction of labour would hasten the end. The writer has had a somewhat similar case of painless labour in a woman who was admitted for vomiting. She had severe hæmatemesis several times before admission, and was much reduced. As there was no recurrence of the vomiting after admission labour was not induced. On the second day a 7 months' foetus was expelled with the membranes intact. The patient, a multipara, never knew that she was in labour until the foetus was passing the vaginal outlet.

The literature of purpura hæmorrhagica is extensive, but comparatively few cases have been recorded in connection with pregnancy. Hirst says—"Purpura hæmorrhagica is apt to be rapidly fatal in pregnancy, which it always interrupts. The disease usually destroys the foetus before it is expelled. The maternal death may be due to post-partum hæmorrhage or to sepsis." Müller, in his *Handbuch der Geburtshülfe*, vol. ii, says—"Purpura hæmorrhagica occurs as a rare but comparatively dangerous complication at any time during pregnancy, and lasts varying periods. Fatal metrorrhagia may occur in the puerperium. The disease, indeed, may

first develop in the puerperium. Dohrn has observed transmission of the disease from the mother to the fœtus. Blood extravasations occurred, which, however, disappeared on the eighth day. A similar case is reported by Lingen." The disease is one of the blood, and pregnancy does not appear to enter into its causation.

In ordinary cases arsenic is useful. In this case the condition of the stomach was such that no medicine could do much good. Under the suprarenal extract the purpuric condition certainly improved, but the rash almost entirely disappeared.

Rupture of the Symphysis Pubis during Labour.—W. Ruth (*St. Petersburg, Med. Woch.*, No. 24, p. 287).—The frequency of rupture of a pelvic synchondrosis is much disputed, but it is certainly a rare accident. Exaggeration of the normal relaxation of the pelvic joints during pregnancy predisposes to it. A woman, aged 30, had pain in the pubic region during the second half of her first pregnancy, and finally could only walk with a waddling gait. After a normal labour she gradually recovered the power of walking. These symptoms returned during her second pregnancy, and the ends of the pubic bones could be moved on one another upwards and downwards for more than $\frac{2}{3}$ in. After a rapid labour and normal puerperium walking was at first painful and uncertain, but rapidly became normal. Pelvic relaxation may also be congenital. Other predisposing causes are the following: Difficult labours, which may produce pressure on the pubes and proliferation of the articular cartilages—a condition favouring rupture at a subsequent pregnancy; diseases of the pelvic joints, especially tuberculosis and rheumatism, and possibly syphilis; pelvic deformities, especially general contraction owing to the smallness of the oblique diameter (in rickets and simple flattened pelvis rupture is rarer

because the oblique diameter is not affected); and osteomalacia, in which rupture is frequent. Exciting causes are the strength of the pains and the force employed by the accoucheur in forceps extraction, especially if applied in the wrong axis. According to Poulet a force of 200 kilogram. (about 441 lb.) is required to rupture a normal pelvis; this cannot be exerted by the uterus or the accoucheur unless traction be applied in the wrong direction. If rupture occurs during normal labour, or during moderate traction on the forceps, there must be some predisposing cause, probably a joint affection. On one occasion rupture occurred although the child was born within the intact membranes. A transverse position of the head in the pelvic outlet and brow presentations have frequently been present in cases of ruptured pelvis, but these causes were probably reinforced by ill-applied forceps traction. Even then some predisposing cause is probably also present. Of 98 cases of rupture of the symphysis 70 occurred after forceps extractions; in only 36 was the pelvis contracted.

Rupture may occur at any one of the pelvic synchondroses. According to Ahlfeld, unless osteomalacia is present the symphysis never ruptures without one at least of the sacro-iliac synchondroses being torn simultaneously. Braun von Fernwald and others are of a contrary opinion. The degree of rupture may vary from a tear of the ligaments to complete separation of the bones and luxation of their cartilages. The immediate result is often to give more room to the advancing head and to allow of its rapid passage through the true pelvis. At the moment of rupture there usually is an audible crack, and the patient feels a tearing pain in the joint, which is very tender. The pubes are more or less separated and may be moved one on the other. The gaping is especially marked when the thighs are flexed, everted, and abducted. Passive movements are exceedingly painful, and there is often incontinence of urine.

If the rupture is complete the legs are immovable and lie completely everted. The diagnosis is usually easy; if the sacro-iliac synchondrosis is also ruptured pressure on the two anterior superior iliac spines is painful and traction on the leg causes descent of the corresponding half of the pelvis.

The results of rupture are not uniform. Sometimes healing is complete in 2 or 3 weeks and the power of walking returns. Occasionally, however, a normal gait is compatible with a still ruptured symphysis. In other cases the symphysis pubis is permanently relaxed and the power of walking is never properly regained. Suppuration in the ruptured joint is a frequent complication; it occurred in 23 of 98 cases collected by Rudaux. Dührssen distinguishes 3 varieties of symphyseal suppuration: (1) the pyæmic, (2) the simple non-septic, and (3) the tuberculous. Unless the case is complicated by puerperal sepsis the prognosis of suppuration in the pelvic joints is good, provided that early incision be made. Cases treated expectantly in which spontaneous evacuation of the pus did not occur usually ended fatally. The mortality after rupture of the symphysis has been high, probably because in the pre-antiseptic period it was frequently complicated by septicæmia or suppuration. The treatment of simple rupture of the symphysis consists in the application of a firm binder and sandbags. Kriele recommends immediate wiring of the bones, but this is usually unnecessary.

According to Rudaux the frequency of rupture of the symphysis has been lessened by the introduction of axis-traction forceps, and the writer claims that it would become still rarer if the high forceps operations were abandoned. A contracted pelvis should absolutely contra-indicate the application of forceps, and the predisposing causes of rupture should never be lost sight of. The following case illustrates this point:

A primipara, aged 32, had no symptoms of pelvic relaxation before labour. In spite of strong pains the head did not advance. After

a dirty midwife had made numerous vaginal examinations a medical man applied the forceps. The foetal heart could not be heard. The extraction was difficult and exhausted two practitioners; at last the head entered the pelvic inlet with an audible snap and a macerated child was easily delivered. While the practitioners were examining the child there was violent hæmorrhage. The midwife immediately introduced her undisinfected hand into the uterus and removed the placenta. The ruptured perineum was sutured. A month later, when the writer saw the case, the temperature was 105°, the pulse 144. The abdomen was distended and extremely tender over the mons veneris and the pubes. The pubic bones were separated and were 2 finger-breadths apart when the thighs were abducted and everted. Pressure on the pubes caused a profuse flow of pus from a sinus, which opened near the clitoris. A probe inserted here struck the rough ends of the pubic bones from which the cartilages had separated. The bladder was intact. The pelvic tear had not healed, and there were lacerations of the vagina and cervix. The legs were rotated outwards and were motionless on account of the pain over the symphysis produced by movement. An anæsthetic was given and the abscess was opened by slitting up the sinus and packed with iodoform gauze. The uterus was enlarged and the pelvis slightly contracted. Four days later death occurred. Post mortem, sinuses were found tracking from the abscess towards each parametrium, which on the left was connected with the vagina by a gangrenous patch. Both sacro-iliac joints contained pus and the iliac bones were detached; no direct communication could be traced between these and the parametric suppuration; the abscesses were probably metastatic.

The cause of the rupture of the symphysis pubis and the two sacro-iliac synchondroses was obviously the forcible forceps extraction through a slightly contracted pelvis. It could have been avoided by perforation of the already

dead child and allowing nature to complete delivery, or, if there had been any urgent indications, extraction by the cranioclast. Rupture of the symphysis was not at first recognised and the resulting abscess was opened too late to prevent septicæmia.

Double Pyosalpinx with Torsion of Both Pedicles.—Mr. Walter L. Woollcombe (*Lancet*, Dec. 7, p. 190).—An unmarried woman, aged 22, was admitted to hospital. Menstruation began at the age of 13; it had always been regular up to admission, but recently there had been diminished loss. Two years previously she had an attack of pain in the right lower abdomen, but never gave up work. There was nausea but no vomiting. She had had many attacks since including one on the left side. The last attack occurred a week before admission. For the previous 2 or 3 months she had noticed an enlargement of the abdomen.

A smooth, rounded, painless swelling occupied the right iliac region, extending above the umbilicus with a sense of fluctuation, but no distinct thrill. On the left side was a similar swelling of the size of half an orange just rising out of the pelvis. Rectal and vaginal examinations showed that these swellings bulged well into the pelvis, that on the left occupying the greater part of the cavity and neither being intimately connected with the uterus, the cavity of which measured $2\frac{1}{2}$ in. and occupied a central position.

The abdomen was opened by a 6-inch incision through the right rectus and the right-sided swelling was exposed and found to be completely covered by a sheet of adherent omentum which on being peeled off disclosed a large torpedo-shaped mass of a dark plum colour, with a smaller, darker, and more solid mass, 3 in. long, on its deep aspect. This entire mass was adherent over its upper half to coils of small intestine which peeled off easily and allowed

the mass to be separated, when it was found to consist of the right tube and ovary with a pedicle with $1\frac{1}{2}$ complete twists from right to left. Occupying the left side of the pelvis and rising into the abdomen was a yellowish-pink cystic swelling with a few adhesions to the sigmoid and pelvic floor. On removal this was found to be a much dilated tube 11 in. in circumference with 2 complete twists of its pedicle from left to right, the pedicle being on the distal side of the ovary, so that on ligation and removal of the tube the ovary was left. After removal of both tumours the pelvis appeared as a large cavity with numerous oozing points from separated adhesions and a small uterus hanging loosely in it, with the supporting ligaments much stretched. A loop of round ligament ($1\frac{1}{2}$ in. long) was therefore picked up and tied on each side, which slung the uterus into a fair position. The pelvis was filled with sterile saline solution to float up the intestines and the abdominal wound was closed with three tiers of sutures. Recovery was uneventful. Vaginal examination before the patient's discharge at the end of the fourth week showed the uterus to be in a normal position, and freely movable, and the lateral fornices to be free from any inflammatory effusion or adherent intestine—a tribute to the efficacy of the saline solution in keeping the pelvis free from gut.

The points of interest are the following:—(1.) The continuance of regular menstruation in spite of the practical destruction of one ovary and both tubes. (2.) Torsion of both pedicles. This is a rare event, for Hartman could find records of only 15 cases of twisted inflamed tubes and these apparently were unilateral.

Foot-presentation: Maternal Attempts at Extraction: Rupture of Neck and Retention of Head.—W. Ruth (*Centralbl. f. Gyn.*, May 25, p. 544).—An unmarried girl, aged 19, fell off some steps on July 7. The last menstrual

period had occurred on Jan. 1. On July 14 labour began. At 1 p.m. on July 15 a foot became prolapsed and presented at the vulva. As the woman was alone in lodgings and could obtain no assistance she attempted to extract the child herself by pulling on the feet. For this purpose she assumed various positions—standing, sitting, and lying down. When the arms were born the patient while lying on her back pulled on the two legs, so that the child's back lay on the abdomen. Suddenly the whole trunk came away leaving the head in the uterus. The placental end of the umbilical cord which ruptured simultaneously was tied by the patient with a dirty piece of black ribbon. The child was said to have moved until the arms were born. The woman was taken to hospital. The pains had ceased, and the uterus was firmly contracted. The genital tract was at once disinfected. The os admitted 3 fingers; its edges were tightly stretched over the retained head. The torn foetal neck was recognised by an exposed cervical vertebra; it projected into the vagina through the os. Attempts at manual extraction failed. The woman was, therefore, chloroformed and the broken neck fixed with vulsellum forceps. Perforation through the occipital bone, which presented anteriorly and to the left, and subsequent expression of cerebral matter allowed the head to be extracted fairly easily with two strong vulsellum forceps, the one on the neck, the other on the lower jaw, external pressure being also used. The placenta, which had a bad odour, was removed imme-

diately afterwards. The uterus was irrigated with a 1 per cent. lysol lotion. The lochia became foetid, and there were rigors with a temperature of 105.8° and a pulse of 135 from the sixth to the tenth day. The temperature then fell by lysis. After the incision of a small abscess of the right labium majus the patient was discharged cured 24 days post partum.

The body was that of a female foetus. The jagged laceration of the neck passed between the sixth and seventh cervical vertebræ. There were no signs of decomposition. Both legs, but especially the left, were deeply bruised and swollen. The epiphyses of the left femur and the upper epiphyses of the left tibia and fibula were separated.

Several authorities have doubted the possibility of a woman during parturition tearing the trunk away from the head, even though the foetus were premature or decomposed. In this case the foetus was premature, but alive just before or during the traction. Owing to the position of the mother and the direction of traction the foetal neck was broken by being bent backwards under the symphysis pubis; on this account a much less force would suffice than if the traction had been made in the long axis of the foetus. There were no grounds for suspecting that the trunk had been separated from the head intentionally by torsion or cutting, and the jagged nature of the wound and the position of the fracture low down in the neck confirmed the woman's story.

NOTES.

THE COMPARATIVE VIRULENCE OF THE BACILLI OF HUMAN AND BOVINE TUBERCULOSIS.—The evidence against Prof. Koch's views as to the unimportance of bovine tuberculosis as a factor in the spread of the disease in man is steadily accumulating. In *La Semaine Médicale*, of Jan. 15, Dr. D. A. de Jong, of Leyden, communicates the results of numerous experiments which were made before the London Congress met. He injected pure cultures of tubercle bacilli obtained both from human and bovine sources into the veins of animals. Whatever the source, tuberculosis invariably followed. Thus 3 calves and 4 oxen were infected by injections of human cultures. The lesions found after the animals were killed usually were not extensive, and in 4 animals there were signs of repair. In 2 cases, however, the disease was advancing, and in one was evidently spreading rapidly. Intravenous injections of bovine cultures in other animals of the same species produced severe and rapidly fatal tuberculosis, especially of the lungs. It is therefore evident that bacilli of both human and bovine tuberculosis may produce tuberculosis in cows, though the disease, which results from the former, is less severe and more chronic. The virulence of bacilli derived from man varies considerably, but it never equals that of bovine cultures. This greater virulence

is not confined to the action of the bacilli on cows. On the contrary bovine bacilli are more fatal than human to goats and sheep. Thus a strong dose of bovine bacilli is rapidly fatal to goats; the same dose of human bacilli, though usually fatal, acts much more slowly. It is of interest that the same dose of tuberculin, whether of human or bovine origin, produces an identical reaction in tuberculous goats; avian tuberculin, however, must be given in doses two and a half times as large before a reaction is obtained. Incidentally, Dr. de Jong shows that contrary to the usually accepted views sheep are just as susceptible to tuberculosis as cows or goats. The rarity of tuberculosis in sheep is due to their mode of life and to the fact that they are rarely crowded together in stalls. In the horse again bovine cultures act as energetically as in other animals. In dogs, which were infected by intraperitoneal instead of intravenous injections, the same result was obtained, that is, the bovine bacilli produced more rapid and extensive tuberculosis than the human. This applied also to tuberculosis produced experimentally in Java monkeys. These experiments show that the bovine bacillus is more virulent than the human, and that this greater virulence is a constant character in rabbits, guinea pigs, cows, goats, sheep, dogs, and monkeys—animals which closely resemble man in organisation and

morbid susceptibility. It is therefore justifiable to conclude that bovine bacilli are not only capable of infecting man, but may produce more extensive and virulent disease than human bacilli.

Are the bacilli of human and bovine tuberculosis identical, or, is but one species of bacillus the cause of mammalian tubercle? Dr. de Jong says yes. In spite of certain cultural distinctions such as the greater difficulty of isolating bovine tubercle bacilli and their slower growth on nutrient media there are no essential differences. After a few generations it is impossible to distinguish a culture of bovine from one of human tubercle bacilli. Again, though bovine bacilli are usually shorter and straighter than human, the contrary condition may be found. Hence the sole distinction is one of degree. However attenuated the bacillus of human tuberculosis may be, if injected in sufficient doses, it will produce tuberculosis in oxen. The converse experiment is obviously impossible, but cases are well known in which the wounds of persons employed in handling the carcasses of tuberculous cattle have become infected. That this accident is not often fatal depends on the usually comparatively benign course of cutaneous tuberculosis, and not on any attenuation of the virus, for Pfeiffer has reported a case in which accidental cutaneous inoculation was followed by general tuberculosis and death. This result, which is very rare in cutaneous tuberculosis due to the bacillus of human origin, points to a greater virulence of the bovine bacillus.

There are many points which still require investigation. Cattle are not the only animals susceptible to tuberculosis, but little is known as to the relative virulence of the bacilli of

different species of animals. According to Smith (*Jour. of Exper. Med.*, III., 4 and 5, 1898) the bacilli of the tuberculosis of swine and cats are almost as virulent as those of cattle, while the bacillus of equine tubercle holds a position intermediate between those of cattle and man. In this connection the relation of avian to mammalian tubercle bacilli is important. Though these are the most widely separated forms of tubercle bacilli it has been shown by Nocard and Roux that by special methods of cultivation indistinguishable cultures of the two varieties may be obtained.

Evidence of the communicability of human tuberculosis to cows and other mammals has also been adduced by Prof. Arloing, in a paper read before the *Académie de Médecine* on Dec. 24, before the London Congress met, he successfully inoculated tubercle by the insertion of bacilli of human origin into the jugular veins of 7 goats, and 3 donkeys. Since then he has never failed to produce tuberculosis by intravenous injections of bacilli from a human source. The animals employed in his later experiments were a calf, a heifer, two sheep, and two rabbits. Of these the calf died of an intercurrent attack of anthrax. The heifer is still alive though obviously suffering from pulmonary tuberculosis. The remainder died of tuberculosis within 2 months of injection. The lesions produced were discrete or confluent granulomata in the lungs, liver, spleen, kidneys, and lymphatic glands, which had a great tendency to undergo caseation. Tuberculous material taken from the lungs produced typical tuberculosis in guinea-pigs. Arloing's positive results, 23 in all, prove that Koch's failures were due either to insufficient virulence or too small a dose of the cultures employed. The fact that it is possible to cultivate strains

of tubercle bacilli of human origin which are incapable of infecting cattle, does not prove that the bacilli of human and bovine tuberculosis are distinct species.

Another important paper on this subject, which has since appeared in the *University of Pennsylvania Medical Bulletin* of Sept. last was communicated to the British Congress on Tuberculosis by Dr. Mazyck P. Ravenel, bacteriologist of the State Live Stock Sanitary Board of Pennsylvania. His results coincide with those of Drs. de Jong and Arloing. Though cultures on blood-serum of bacilli from bovine and human sources are usually distinguishable, the bacilli in the sputum of tuberculous cattle frequently resemble those of human origin. The distinction observable in cultures is accentuated by the differences in pathogenic power, the bovine bacillus being more virulent than the human for guinea-pigs, rabbits, dogs, horses, and goats. Pigs alone of all the animals tested proved highly susceptible to both bacilli, and were as readily infected through the alimentary canal by human tuberculous sputum as by bovine tuberculous material. The bacillus of human origin when recovered from the pig had greatly increased in virulence. These results are opposed to those of Prof. Koch who found that only slight lesions were produced in young swine fed on human tuberculous sputum, but severe tuberculous disease when bovine bacilli were mixed with the food. ("REVIEW," Vol. IV., p. 452). Dr. Ravenel knows of 8 cases in which local tuberculosis in man was clearly of bovine origin. Of these 2 proved fatal from general tuberculosis. He argues therefore, as does Dr. de Jong, that the bovine bacillus is highly pathogenic for man, and is possibly, as in animals, even more virulent

than the human bacillus. Intraperitoneal injections of human tuberculous sputum produced more or less extensive tuberculous lesions in 3 out of 4 calves, though intraperitoneal injections of pure cultures obtained from these calves failed to infect others. The greater virulence of human sputum than of pure cultures of bacilli of human origin is probably due to the production of a mixed infection by the former. Ravenel's experiments prove once again that the two varieties of bacilli are pathogenic in varying degrees for the same animal.

Dr. de Jong concludes that the danger to cattle from phthisical attendants is probably negligible, for under ordinary circumstances they are unlikely to receive a sufficient dose of bacilli and if infected usually recover. The danger to the attendants of tuberculous cattle is on the other hand, owing to the great virulence of the bovine organism, probably greater than is usually supposed. The dangers of using the flesh and milk of tuberculous animals are mostly avoidable. Those due to the inhalation of the dried sputum of tuberculous cattle are much more serious. There are no grounds for the common assumption that infection from cattle menaces man through his food rather than through the air he breathes. It is commonly admitted that the chief mode of infection from man to man is the inhalation of dried bacilli. Several facts tend to show that the same applies to infection from cattle to cattle and from cattle to man. For tuberculosis in cattle, as in man, usually begins in the lungs, and it has long been known that cattle attendants and their families are liable to an unusually severe form of phthisis. Hence the air of polluted cattle sheds is a source of danger to man.

Prof. Koch seems to have misinterpreted his own results. For Krompecher (*Annales de l'Institut Pasteur*, Nov., 1900) has shown that the action of dead tubercle bacilli is proportional to their virulence during life. Hence the fact that Prof. Koch produced abscesses at the point of infection, which contained scattered tubercle bacilli, does not, as he claimed, show that living bacilli of human origin acted on cattle in the same way as dead bacilli on susceptible animals, for dead bacilli would produce no abscess whatever, unless they had been virulent during life for that particular animal. The abscesses show the susceptibility of cattle to the bacillus of human tuberculosis.

THE THEORY OF FERMENTATION. — In the *Münchener Medicinische Wochenschrift* of April 16 Dr. Carl Oppenheimer gives a historical summary of what is known on this subject. When unorganised ferments were discovered their action was compared to that exercised by certain inorganic bodies. All processes marked by the decomposition of a substance by simple contact with another, which itself underwent no apparent change were termed by Berzelius "catalytic." He included under this name not only the specific action of ferments on definite substances but also the power which they all possess of decomposing hydrogen peroxide. Later many supposed catalytic processes were explained by simple chemical decomposition. As to the others the use of the term "catalytic" in no way explained the nature of the action. For years there was a dispute between the supporters of the chemical decomposition theory of Liebig and of the vital theory of Pasteur.

The term catalysis is now employed only in the sense defined by Ostwald—"the acceleration of a slow and prolonged chemical process by the presence of a foreign body." Ostwald's pupil, Bredig, prepared some exceedingly fine, pure, and permanent emulsions of certain metals by the electrical pulverisation of electrodes under water. These emulsions, or colloidal metals ("Metallsole"), which resemble organic colloids physically, have a remarkably active catalytic action on peroxide of hydrogen. This is analogous in every way to that of the organic enzymes; thus the decomposition of peroxide of hydrogen is delayed or inhibited by high temperatures, and certain poisons, such as prussic acid, whether the catalytic agent be an enzyme or an emulsion of platinum (colloid platinum). Bredig has, therefore, justly claimed that there is no essential difference between inorganic and organic catalytic agents. He went too far, however, when he assumed that the processes of catalysis and fermentation are identical, and spoke of organic and inorganic ferments, the former being represented by the enzymes, the latter by colloidal platinum. Even assuming that the process of fermentation is identical with the catalysis due to metallic colloids the term "inorganic ferment" is a confusing contradiction since the conception of a ferment as a secretion of living cells implies an organic origin. But there are no sufficient grounds for this assumption; indeed it is probable that the catalytic action of enzymes, that is, their power to decompose peroxide of hydrogen, should be distinguished from their specific fermentative action. Tamman and Duclaux have shown that the catalytic action of organic enzymes does not follow the laws of catalysis exactly, since the ferment undergoes some change and is not capable of

complete regeneration as a catalytic agent. Moreover, it is now known through the work of Jacobson that the catalytic action is probably connected with some substance present in the ferment rather than with the ferment itself, for it is possible to destroy the catalytic power and leave the specific fermentative action unimpaired. Loew, therefore, assumes that a special catalytic enzyme, "catalase," accompanies all unorganised ferments. Even if the decomposition of fermentation be explicable on the theory of catalysis, the specific action of enzymes is not. Catalysis explains in no way the specificity of ferments: why, for instance, diastase is inert to albumin, why emulsin acts only on certain glucosides. There is some property inherent in every ferment which brings it into relation with the matter it ferments and with none other. The fact that this relation must obviously be entered into before specific decomposition is possible alone renders the explanation of fermentation by simple catalysis untenable. The final act of fermentative decomposition may or may not follow the laws of catalysis; the preliminary processes, which are probably of a synthetic nature (the ferment combining with the matter to be fermented) distinguish the true enzymes from simple catalytic agents, and emphasize the inappropriateness of the name "inorganic ferments." Thus pepsin combines with freshly prepared fibrin. Again, enzymes when present with fermentable matter in watery solution are more resistant to heat than when alone, because the combination which results confers some protection.

Recently the scope of the whole question of fermentation has been widened by the study of the relations between bacterial toxins and true ferments. The resemblance between

them was first pointed out by Roux and Yersin in 1888. To-day the series of bodies connecting the ferments and toxins is almost complete. At one end is the rennet ferment, at the other the diphtheria and tetanus toxins; between them in order come the specific ferments of albumins, such as præcipitins, the specific ferments which act only on living cells, such as hæmolysins and bacteriolysins, and the specific bacterial blood poisons, such as tetanolysin and staphylolysin. As one hæmolysin dissolves only the red corpuscles of a sheep, another only the red corpuscles of an ox, so the tetanotoxin combines with avidity with the nerve-cells of a mouse but often refuses to do so with those of a fowl ("REVIEW," Vol. IV., p. 218). The higher organisms, as well as the lowest unicellular beings, according to Monti, require ferments to maintain life. Ehrlich supposes that every molecule of toxin or enzyme is composed of two distinct atom groups, the one stable, but unsatisfied—the haptophorous group—the other unstable—the toxophorous or zymophorous group. Similarly, he supposes that the living protoplasmic molecule consists of a central atom group (*Leistungskern*) comparable to the benzene ring and unsatisfied lateral atom groups or side-chains (*Seitenketten*). The haptophorous group of the toxin molecule, though itself harmless, combines with the unsatisfied side-chains of the protoplasm, wherever it meets them, and so plays the important part of anchoring the toxin or enzyme to the tissues, and enabling the deleterious toxophorous group to come into action. Neither the specific ferment nor the toxin can gain a foothold unless there is present a haptophorous atom-group of the toxin or ferment; if there is not, the unstable toxophorous or zymophorous group remains inactive. On this depends the formation of specific anti-

toxins and other anti-bodies (*Antikörper*). Side-chains are regenerated by the cell-protoplasm in excess of those required to bind the haptophorous group of the toxin-molecule, and are subsequently cast off into the circulation free to combine with fresh toxin, and, by combining, to render it innocuous. The resemblance between the ferments and toxins is increased by the recent discovery of Ehrlich and Morgenroth of a specific "anti-body" for rennet. Ehrlich's side-chain theory applies, however, only to the group of ferments included between rennet on the one side and bacterial toxins on the other. All attempts to produce an anti-pepsin or anti-diastase have failed. Possibly the haptophorous group may combine and become satisfied without excessive regeneration of the side-chains of the cell-protoplasm. Possibly the side-chains are too firmly anchored to be cast off into the circulation free and unsatisfied, that is as anti-ferments. At any rate the non-existence of anti-pepsin is insufficient to negative Ehrlich's theory. But there are great difficulties in the assumption of haptophorous groups and side-chains in fermentation of such simple substances as cane sugar. Whatever the truth of Ehrlich's theory the chief point remains that in true fermentation the ferment first combines with the substance it ferments and that decomposition and catalysis are only the last phase of the process. True ferments and simple catalytic agents are, therefore, distinct.

Monti in his "Modern Pathology" points out that enzymes to a certain extent behave as living matter; they are active only in determinate conditions—within certain limits of temperature—and are destroyed by the many agents which kill micro-organisms. Indeed

for a long time the enzymes (ferments) were confused with the zymogenic bacteria. Enzymes, however, can be separated from the organisms, cells or bacteria, which have elaborated them, and, once isolated, act independently. They differ from living matter in that they are capable neither of reproduction nor of multiplication. As Hueppe has observed, enzymes are active proteids which constitute a connecting link between dead albumin and living protoplasm.

THE SMALL POX EPIDEMIC IN LONDON: VACCINATION VINDICATED.—The Metropolitan Asylum Board have issued a report dealing with the first 5 months of the present small pox epidemic. The number of patients received at the wharves numbered 1963. Of these 294 died, 892 recovered, and 777 remained under treatment. Small pox was practically absent from London in the first 5 months of 1901. Towards the end of Jan. 5 cases were admitted to hospital, and in the middle of Feb. one; but during March, April, and up to May 29, not a single case. On the last date a patient was admitted from Islington, on June 10 one from Whitechapel, on the 28th one from Hackney; and on the 28th and 29th one on each day from Wandsworth. During July, and up to Aug. 21, single cases occurred in various parts of London. From Aug. 22 and onwards, however, the disease appears to have obtained a hold in the parishes of St. Marylebone and St. Pancras. Subsequently, cases occurred in every one of the 31 parishes and unions of the metropolis. The gross mortality was given as 24.28 per cent. But many cases of recent admission are included because they have been completed by death, whereas the contemporary ones which would nearly all end in recovery could not be in-

cluded until completed, thus the rate of mortality given is higher than the complete rate will be.

In view of the prevalence of pernicious anti-vaccination views and of the consequent neglect of vaccination, which is largely responsible for the epidemic, the Board's statistics are important though they only confirm well-attested facts. The total mortality rate per cent. of vaccinated cases was 14·21; and of unvaccinated cases, 50·52. Under the age of 10 there were only 12 vaccinated cases and no deaths, and 95 unvaccinated cases, of which 52 were fatal—a percentage of 54·74. Under 20 there were 161 vaccinated cases, of which 3 were fatal—a percentage of 1·87; and 161 unvaccinated cases, of whom 70 died—a percentage of 49·07. There appears to be a distinct diminution in the protective power afforded by primary vaccination after the age of 20, the death rate rising from 9·85 in vaccinated cases between 20 and 25 years of age to 28·95 in cases between 35 and 40. Amongst the patients admitted during the year were 21 who were employed in disinfection work, of whom one died. Not one had been revaccinated since infancy. In striking contrast are the statistics of the staff of the small pox hospitals and the ambulance service who are

revaccinated on engagement. Of 2,198 persons employed at the hospitals between 1884 and 1900 inclusive, during which 17,900 small pox cases were received, only 17 contracted small pox. Of these, 13 were not revaccinated until after they had joined the ship and 4 were workmen who escaped medical observation. During the past year the staff has been much increased, but not one case of small pox has occurred. Not one of the staff of the hospital ships has ever died of small pox, and not one has ever suffered from the disease for the past 8 years. From the year 1881 to the end of 1901 there have been employed on the ambulance service 1,282 persons. Four contracted small pox. Of these one escaped vaccination when appointed; he died; one was unsuccessfully revaccinated on joining the service, and the operation was not repeated; she also died; the two others had been revaccinated and recovered. These facts confirm the conclusions arrived at by the special committee of the Board appointed to collect statistics after the small epidemic of 1870-2. They found that in more than 14,800 cases received into the hospitals there were only 4 well-authenticated cases in which revaccination had been properly performed, and these were mild attacks.

LEADING ARTICLES.

AMERICAN JOUR. OF MED. SCIENCES, Nov.,
p. 645.

Examination of the Blood in Appendicitis.

By Dr. J. C. DA COSTA, JUN.

The writer has examined the blood in 118 cases of appendicitis treated by operation. 38, or 32.2 per cent., were unattended by suppuration; in the remaining cases this condition was present with or without further inflammatory changes. In practically every case of appendicitis the hæmoglobin in the blood is diminished (the anæmia of appendicitis). In this series of cases the average loss was about 30 per cent. The diminution in the erythrocytes was usually inconspicuous. The average loss in 38 catarrhal cases was 16.2 per cent. and in 80 suppurative cases 11.9 per cent. The hæmoglobin value of the corpuscles in the majority of cases was about 0.7 or 0.8 per cent. of the normal.

The fluctuations of the leucocytes are the most important feature. In the catarrhal and interstitial forms of appendicitis without abscess formation the number of leucocytes usually does not exceed normal (10,000 per c.mm.) and is occasionally subnormal, but sometimes counts of 12,000, 15,000, or more, may be made. In cases of abscess, gangrene, or general peritonitis, there is usually well-marked leucocytosis. The majority of appendicular abscesses raise the count to from 5,000 to 20,000 or more. In the writer's cases the average was 17,450—nearly double that of the catarrhal cases. But if the abscess is so effectually walled in that little or no toxic absorption occurs there may be no increase. On the other hand, in profound sepsis, when reaction is impossible, leucocytosis may be absent and there may be even

leucopenia. But such a condition is rare; in only 2 out of 12 fatal cases was well-defined leucocytosis absent. In these the counts were 6000 and 11,200 respectively. In the other 10 they averaged 19,400, and ranged from 14,200 to 58,500. The leucocytosis was found to be chiefly due to absolute and relative increase of the polynuclear neutrophiles; the lymphocytes, large mononuclear forms, and the eosinophiles being relatively diminished.

CONCLUSIONS.—Leucocyte counts between 10,000 and 15,000 or 17,000 cannot be depended upon in diagnosing the form of appendicitis, since they may be found in catarrhal cases, but counts of 20,000 or more almost always indicate the presence of pus, gangrene, or general peritonitis. In 1 out of 4 cases of appendicular abscess the diagnosis is justified by the leucocyte count. The degree of leucocytosis as determined by a single blood examination cannot be relied upon in prognosis. If, however, by repeated examinations a progressive increase in the number of leucocytes is detected it may be concluded that the collection of pus has become more extensive or that general peritonitis has been excited. Such an accident was heralded in 3 cases by an increase varying from 6,600 to 14,000 cells per c.mm. in excess of the number previously counted. Perforation is usually accompanied by an abrupt rise in the number of leucocytes, but in debilitated subjects this may be absent or even a sudden decrease may occur. If recovery after operation is uneventful, complete emptying of the abscess is followed within a few days by a decline to normal of the number of leucocytes; persistence of leucocytosis after the third or fourth day following operation is usually due to undrained pockets containing pus, or to general peritonitis. Hence the value

of a daily leucocyte count after operation. Examination of the blood is useless in the diagnosis of appendicitis from the conditions resembling it—ovarian abscess, pyosalpinx, ectopic pregnancy, perinephritic abscess, hepatic abscess, and malignant disease of the cæcum. These conditions give rise to similar blood changes. But if the diagnosis lie between appendicitis and typhoid fever, leucocytosis suggests the former, for it occurs in the latter only when perforation takes place. (See "REVIEW," Vol. IV., p. 397). Leucocytosis also excludes non-inflammatory conditions, such as simple enteralgia, lead colic, ovarian neuralgia, ovarian cyst, and movable kidney.

LANCET, Dec. 28, p. 1788.

Juvenile Tabes from Congenital Syphilis.

By G. T. BROOKSBANK JAMES, F.R.C.S.

CASE 1.—A young woman, aged 20, complained of diplopia of a week's duration. The upper lids were slightly retracted, the left more than the right, and when she glanced down their movements lagged behind those of the eyeballs. The pupils were unequal, the right being the larger; they were inactive to light but reacted slightly on accommodation. There was complete paralysis of the left external rectus. Vision in the right eye was $\frac{5}{6}$, in the left $\frac{6}{8}$, the defect in the latter being probably due to the want of accurate fixation. The thyroid body was slightly enlarged, the pulse was 80 and regular. When she stood with the feet together and the eyes closed she swayed; the knee-jerks were absent and there was general slight but definite anæsthesia of the lower limbs. The upper central incisors were widely separated and narrowed at their cutting edges. There was no history of snuffling or of rash. The

general health had been good until the present illness. She had not felt well for about 12 months. She became readily tired on walking and lost flesh. For about a month she had complained of darting pains in the upper dorsal region. Recently she had sharp shooting pains in the course of the right ulnar nerve and numbness in the ring and little fingers. She had also felt a few sharp twinges in the left calf.

Her father, aged 46, was strong and healthy. He showed no signs of past disease except a scar in the groin. At 19 he was in hospital for about 10 days with a urethral discharge and a suppurating bubo, but there was no sore on the penis, sore throat, or rash. He was treated with pills and ointment for about 6 weeks. Her mother, aged 42, gave no history of syphilis and showed no signs of the disease.

The following are notes of the cases of the remaining children of this couple :—

CASE 2.—A boy, aged 17, had a square head, prominent forehead, and saddle-shaped nose. The upper central incisors were separated and pegged. There were scars at the angles of the mouth. There were gross central choroido-retinal changes in the right eye, with vitreous opacities. R.V.= $\frac{5}{6}$; L.V.= $\frac{6}{12}$. The right pupil was sluggish to direct light but acted consensually. The knee-jerks were sluggish. In infancy he had snuffles.

CASE 3.—A girl, aged 15, had a saddle-shaped nose. Her central incisors were separated and narrowed. The pupils were unequal, the right being the larger; they were feebly active to light and reacted to accommodation. The knee-jerks were sluggish. V.= $\frac{5}{6}$ in each eye. The upper limbs were paralysed in infancy.

CASE 4.—A girl, aged 10, had a saddle-shaped nose. The central incisors were

separated and narrowed. The pupils were normal, and the knee-jerks were present.

CASE 5.—A girl, aged 8, had a thick, pasty-looking skin and a saddle-shaped nose. The central incisors were separated and narrowed below. The pupils were unequal, the right being the larger; they were inactive to light and and feebly inactive to accommodation. The knee-jerks were sluggish. The fundi were normal. $V.=\frac{6}{18}$ in both eyes. There was compound hypermetropic astigmatism.

CASE 6.—A boy, aged 4, was normal.

CASE 7.—A healthy infant, aged 18 months.

Case 1 is evidently an example of tabes. It is possible that mental symptoms will supervene and the case end as one of general paralysis. The existence of two of the symptoms of early exophthalmic goitre at the same time is probably accidental. The retraction of the upper lid is more probably due to some central irritation than to an affection of the sympathetic. Case 5 seems to be a case of early tabes.

Such cases are very rare. Mr. Jonathan Hutchinson's immense experience has not furnished a single example of locomotor ataxy from congenital syphilis, nor has he seen from the same cause the isolated paralysis of an external ocular muscle, such as that of the left external rectus in Case 1. Raymond has not seen a congenital example among 500 cases of ataxy. Sir William Gowers has seen several cases and Dr. F. W. Mott has described one case. The characteristics distinguishing such cases from Friedreich's ataxy have recently been specially pointed out by Mackie White (Brain, 1898) and others. The presence of the Argyll-Robertson pupil and a history of syphilis are the chief points of distinction. In Case 5 there were evidences of tabes at the early age of

8—the earliest age at which infantile general paralysis has yet been seen. Such cases lend strength to the hypothesis that some of the small percentage of cases of adult tabes in which acquired syphilis can be definitely excluded may be due to the congenital disease.

Therapeutic Gazette, Dec., p. 801.
Blindness from taking Methyl Alcohol.
 BY SWAN M. BURNETT, M.D., PH.D.

A number of poisons—quinine, tobacco, and ethyl alcohol—has a predilection for the nervous apparatus of vision. Amblyopia of varying degrees, and even total blindness not infrequently result. Recently methyl or wood alcohol has been shown to be a dangerous agent of this class. McCoy and Michael in 1898 reported a case in which it was supposed to have caused blindness. In 1899 a number of cases was recorded in which blindness of varying amount and even death followed its ingestion, and many others followed with alarming rapidity. The clinical features of all the reported cases are similar, and are unlike those of any other form of toxic amblyopia. From the history and the appearance of the fundus it is possible to say almost with certainty that the poison was wood alcohol. Some hours after ingestion, never less than 12 and seldom more than 48, there is dimness of sight, which in a few hours may deepen to absolute blindness. The pupils usually are widely dilated and irresponsive to light, though they may react with convergence. There is no pain, but in some cases a feeling of soreness in the orbit and tenderness on movements of the eyes are present. If the dose is large there are nausea,

vomiting, vertigo, and unconsciousness. In some cases death has ensued. The fundi in the early stages usually show no great change. In some cases more or less marked dimness of the outlines of the discs and alteration in the retinal vessels were noticed. The degree of eventual blindness varies, but commonly it is complete or nearly so. In one or two instances recovery of normal vision was reported. In some cases a central scotoma was first noticed, then rapid obliteration of the whole field. Return of vision in some part of the field, before the stage of atrophy sets in, even in cases in which total blindness results, is a characteristic. In time atrophic changes are noticed in the disc, which increase until it becomes white. The whiteness is of the kind usually seen in retrobulbar neuritis, and not that which follows papillitis; the outlines of the disc being clear and the retinal vessels not markedly differing from the normal. The time at which the atrophy begins varies. In one case it was noticed as early as the fourth day, but usually changes in the disc are not observed until more than a week after the blindness has set in. The amount of methyl alcohol necessary to produce a noticeable effect varies. In some cases a large amount produced no greater effects than in others in which a small amount was taken. Recently cases have been reported in which blindness with atrophy of the optic nerves has followed ingestion of Jamaica ginger, essence of peppermint, and some other of the essences kept for household consumption. The blindness was caused by methyl alcohol which had been used as a substitute for ethyl alcohol in the manufacture.

The poison may enter the system in other ways than by the stomach. In some cases the patients were only exposed

to the fumes of the alcohol in an enclosed beer vat while using shellac for which wood alcohol had been employed as a solvent ("REVIEW," Vol. III., p. 446). De Schweinitz reports a case of a varnisher who was affected by the fumes of the varnish in which wood alcohol had been used as the menstruum. He had also used the alcohol to remove the varnish from his hands and arms. Idiosyncrasy no doubt plays an important rôle in the character and extent of the toxic effect. When several men have taken the drug at the same time, some have been affected with severe gastrointestinal and nervous symptoms, some have become blind, and others have died. In the fatal cases some of the patients became blind.

CASE. 1.—A man, aged 32, addicted to alcohol, took, on Oct. 6, 1898, from 2 to 4 ounces of wood alcohol. Within 48 hours vision began to fail rapidly, and by the 10th he was totally blind. The pupils were widely dilated, and the fundi were normal. A little vision gradually returned in the right eye, principally in the peripheral field, but in the left there was no perception of light. After Oct. 26 the sight in the right eye gradually faded, leaving total blindness.

When he was first seen by the writer, on March 9, 1899, there was no perception of light. The discs were white, had fairly defined edges, and showed no evidence of papillitis. The pupils were widely dilated and fixed. This condition has remained unchanged.

CASE 2.—On Nov. 25, 1899, a man, aged 65, had widely dilated pupils which did not respond to light, and vision was confined to perception of movements. The fundi were normal. Four weeks later the discs were perfectly white and had sharp edges. Vision had improved somewhat: he could count fingers at one metre. It was then elicited that

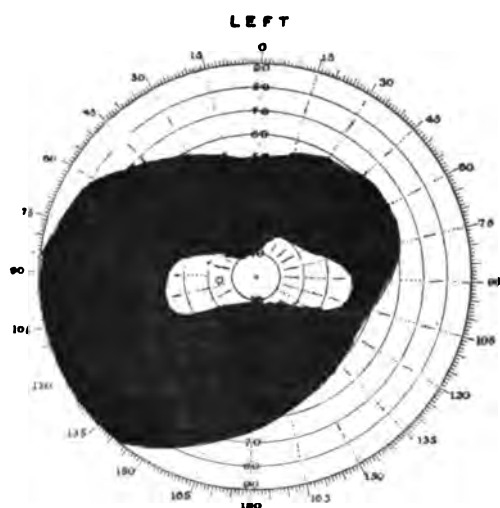


FIG. 1.



FIG. 2

before he became blind he had drunk a table-spoonful of alcohol in water which a druggist had sold him, cautioning him that it was for outward application. On the third day he awoke with impaired vision. When last seen, on Jan. 24, 1900, he could count the fingers at two metres with the right eye; with the left he could distinguish only movements of the hand. The visual fields are shown in Figs. 1 and 2.

CASE 3.—On March 25, 1901, a healthy looking man, aged 64, who had always been a heavy drinker was seen. In the left eye vision was confined to perception of movement in the outer part of the fields; it was somewhat better in the right eye. The pupils were dilated and irresponsive to light. The discs were white and had well defined outlines. Up to 3 years ago he had good sight. Then on one of his periodical outbreaks being in a prohibition community and unable to get drink he took "quite a lot" of essence of Jamaica ginger. When he recovered he was totally blind.

See also "REVIEW," Vol. III., p. 309.

[BOSTON MED. & SURG. JOUR., Dec. 5, p. 620.

Similarity of the Early Symptoms of Simple Abdominal Contusion and of Contusion with Severe Intestinal Injury.

By JOHN T. BOTTOMLEY, M.D.

The writer has compared 20 cases of severe intestinal injury from contusion admitted to the Boston City Hospital, in which the existence of the injury was proved by necropsy, operation, or death from acute peritonitis, with an equal number of cases of undoubted simple contusion (in which the symptoms disappeared in a few days). Cases of simple contusion were chosen as nearly as possible identical with those of intestinal injury. In both classes the causes were the same—blows of a wagon shaft, falls from various heights, kicks of men or horses, being run over, being fallen on or struck by objects, and squeezing. Thus causes apparently identical may produce a trivial or a severe injury. But severe well-localised violence is usually an important factor in intestinal injury. Flying objects such as pieces of board from circular saws are liable to cause serious injuries. Injuries quite similar may

cause profound shock in one case, none in another; the pain may be intense in one case slight in another. Pain was present in all the cases of intestinal injury, and in all but one of those of simple contusion. It may be the only symptom of a severe injury—e.g., complete rupture of the ileum. Vomiting occurred on admission in 10 cases of each class; it was absent in 2 cases of intestinal injury and in 7 of simple contusion, but in about half the cases (of either class) in which it was absent on admission it appeared within 2 hours. Its appearance late in, or after, the first 24 hours is usually of serious import. None of the other symptoms—shock, muscular spasm, distension, tenderness, external signs of violence (contusion, abrasion, or traumatic hernia), dulness, alterations of temperature and pulse can be relied upon in the diagnosis of intestinal injury.

Laparotomy was performed in 11 of the 20 cases of intestinal injury, in only one with success; the 9 cases treated expectantly were all fatal. In the successful case operation was performed within 4 hours of admission; four cases were operated on 5 or 6 hours after admission, one 12 hours, four 24 hours, and one 48 hours. In the cases not operated on the average duration of life after the injury was 2·33 days, the extremes being 7 days and 1 day. In cases of simple contusion the symptoms disappeared on an average in 4·4 days; in 2 exploratory incisions were made; nothing was found, and uneventful recovery ensued.

TREATMENT.—No sign or combination of signs shows whether an abdominal contusion is accompanied by severe intestinal injury or not. Laparotomy is the only means of making a diagnosis sufficiently early for treatment. To get the best results it must be done within a short time—3 to 5 hours of the injury. It should be an early routine measure in all but

the most trivial cases of abdominal contusion. To wait for symptoms of peritonitis is to wait too long. Improvement in the first few hours may be deceptive; it may be only reaction from shock and should furnish the opportunity for operation. Many operations would be no doubt performed in cases in which there is no intestinal injury, but they are attended with little danger. Nimier states that of 307 cases of abdominal contusion treated expectantly 92 were fatal; Schmitt says that the expectant treatment give a mortality of 97·5 per cent. On the other hand, Petry found that the mortality of 42 similar cases treated by laparotomy was 66·7 per cent. Kirstein had a mortality of 55·5 per cent. in 18 cases; in 4 laparotomy was done within 5 hours of injury and in all successfully. His statistics show that every hour that passes after the injury lessens the chance of recovery after operation. The reported mortality of cases operated on in the first 24 hours is 45 per cent.; after the first 24 hours, 66·6 per cent.—figures which, when compared with the 97·5 per cent. mortality of the expectant treatment, are a strong plea for early laparotomy.

MEDICAL CHRONICLE, Oct., p. 18.

"Spurious Abortion."

By W. E. FOTHERGILL, M.A., B.Sc., M.D.

"Spurious abortion" has been defined as "the development within the uterus, in the absence of uterine or extra-uterine gestation, of a membrane having the essential characters of the decidua of pregnancy and accompanied by the signs of early pregnancy; and its separation and expulsion from the uterus, with hæmorrhage, thus simulating an abortion." This definition was based upon 3 cases which

were said to "mimic abortion in the occurrence of a period of amenorrhœa with enlargement of the uterus, and the formation within it of a body, the detachment and expulsion of which is followed by a return to menstrual regularity." Dr. Griffith published a note on the Importance of a Decidual Cast as Evidence of Extra-Uterine Gestation. (*Transact. Obst. Soc.* 1894.) His patient was 25, and though she had been married 2 years, had not previously been pregnant. After 3½ months amenorrhœa, during which she suffered from morning sickness and the breasts enlarged, a brownish vaginal discharge appeared. Next day she could not micturate, and after passing a catheter, a cast of the uterus was found lying in the vagina. On the following day under an anæsthetic, slight enlargement of the uterus was detected. As the circumstances were thought to point to ectopic pregnancy laparotomy was performed. Nothing abnormal was found. The uterine cast was 2½ inches long and 2 inches broad. Its inner surface was smooth and bore no trace of the attachment of an ovum. The outer surface was rough. Microscopic examination showed that it consisted of typical decidual tissue, and that it contained no chorionic villi or any foetal structure.

In 1896 Dr. Dakin presented to the Obst. Soc. "A Cast from the Uterus, having all the Characters of the Decidual Membrane found in connection with Ectopic Gestation." The patient was 27 and had once previously been pregnant. Fifteen months after the birth of a dead child, on May 17th, she menstruated as usual, but there was no further discharge until June 27th, when a brownish discharge appeared. After this had lasted 3 days a cast of the uterus was expelled. The uterus was considerably enlarged, and to the right of it a swelling, as large as a hen's

egg, was felt. The breasts contained milk. Abdominal section was performed in the expectation of finding tubal pregnancy. The swelling, however, proved to be a thin-walled ovarian cyst. Thereafter menstruation was regular. The cast was 3½ in. long, 1½ in. broad, and ⅓ in. thick. It consisted of decidual tissue, and contained no trace of an ovum.

In 1897 Dr. T. W. Eden presented to the Obst. Soc. "A Decidual Cast of the Uterus, from a Case in which there was no Evidence of Extra-uterine Gestation." It was expelled by a patient who had been pregnant 7 times. After 10½ weeks' amenorrhœa hæmorrhage suddenly began. It was followed next day by expulsion of a triangular cast, measuring 4 in. from base to apex, 3½ in. in breadth, and varying from 3 to 8 mm. in thickness. The outer surface was rough and irregular; the inner was dull, glistening, and thrown into numerous longitudinal folds. There was no trace of placental tissue, amnion, umbilical cord, or foetus. The cast was hardly distinguishable from a true decidua vera. The arteries showed widespread thickening of the intima, leading, in most cases, merely to deformity of the lumen, but in a few causing almost complete obliteration. There were also marked œdema, congestion, and extensive interstitial hæmorrhages; the decidual cells and the capillaries showed early fatty degeneration in many parts of the membrane. After a careful re-examination of Dr. Griffith's, Dr. Dakin's, and his own specimen, Dr. Eden found that all the casts closely resembled the decidua of pregnancy. (*Brit. Med. Jour.*, 1897, II.) The connective tissue stroma was converted almost entirely into decidual cells. The membrane was roughly divided into a superficial compact, and a deep cavernous layer. In the former the uterine glands had almost disappeared; in

the latter they persisted as somewhat dilated spaces. But the distinction was not quite so precise and well defined as in the decidua of pregnancy. The surface epithelium was lost, and the membrane was limited by a layer of flattened cells; the mouths of the glands had disappeared. The characters peculiar to the decidua serotina—invasion of the tissues by chorionic villi and masses of foetal epiblast and formation of placental sinuses—were absent. Dr. Eden concluded that by the microscope alone the casts could not be distinguished from those found in extra-uterine gestation.

Dr. Fothergill recently obtained a specimen similar to those described. The patient was a young lady in good health. Menstruation had always been painless and regular. There had been one pregnancy, which terminated at term on Oct. 16, 1900; the child was not suckled. Menstruation recommenced 5 weeks after the confinement and remained regular. In March, 1901, the period was missed, the breasts enlarged and became tender, and some nausea was felt. On April 4 she had violent pains like those of labour. Slight hæmorrhage followed. Every symptom and sign of early abortion were present. The vagina was packed. Next morning, when the packing was removed, a triangular sac of decidual tissue, 6 cm. long, 3 cm. broad, and 1 cm. thick, with a shaggy external surface and apertures representing the cervical canal and Fallopian tubes was found. The internal surface was smooth, thrown into ridges, and showed the openings of the uterine glands. There was no trace of an ovum, nor did any part of the surface look as if it had been altered by the action of chorionic villi. On the vaginal plug was found a yellowish body of the size of a split pea, the nature of which was not apparent to the naked eye. Sections of the cast showed it to



FIG. 1.—External surface of the cast.

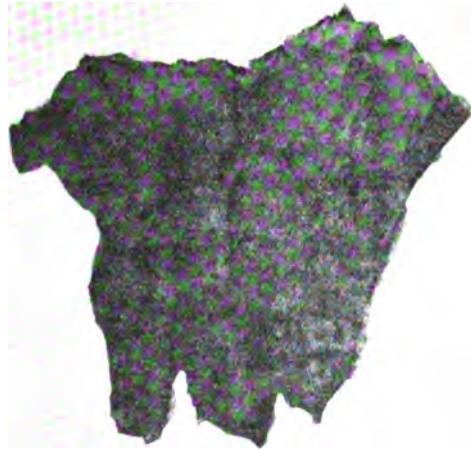


FIG. 2.—Cast laid open to show internal surface.

be composed of typical decidual tissue. The uterine epithelium was unaltered on a considerable portion of the surface. In the deep layer of the decidua the uterine glands were unaltered, but in the middle and superficial layers they were dilated and had lost their epithelium.

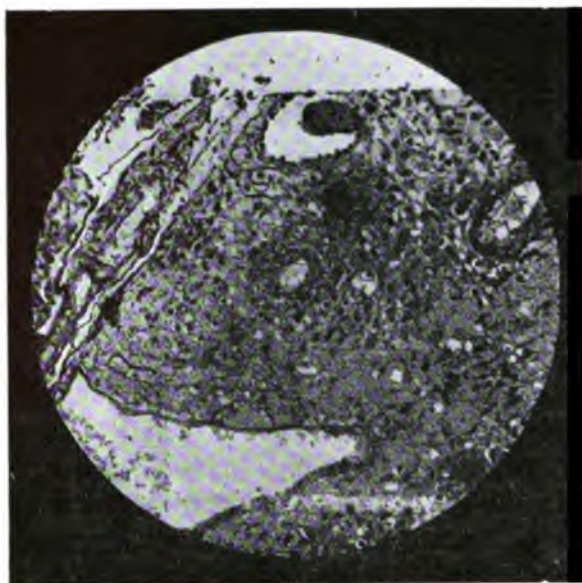


FIG. 3.—Section of cast showing decidual tissue and dilated uterine glands partly lined by epithelium.



FIG. 5. Portion of chorion with villi. The epithelium (syncytium) is separated slightly from the chorionic membrane, but is seen *in situ* on the villi.

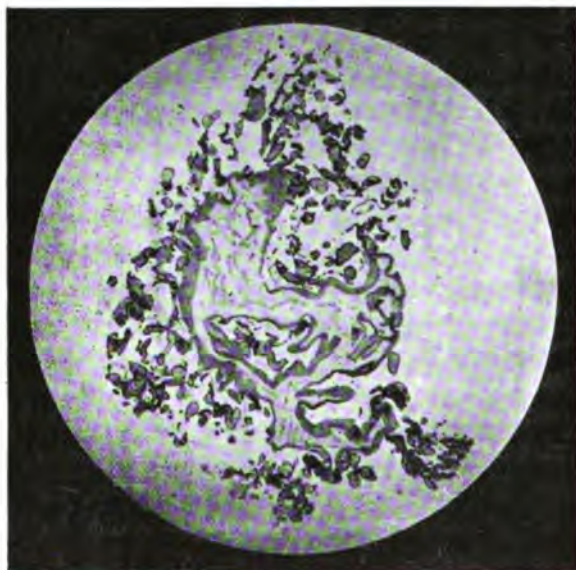


FIG. 4.—Section of the complete ovum (low magnification), showing the vesicle formed of chorion and surrounded by chorionic villi. (An involution of the chorion is cut so as to show the epithelium inward within the vesicle. This is not amnion).

There were numerous large decidual cells, and numerous spaces filled with fresh blood. No chorionic villi or portions of chorionic epithelium were visible. Fig. 3 is a micro-photograph of a portion of the middle layer of the decidua, and shows uterine glands partly lined by epithelium as well as characteristic decidual tissue. Sections of the small body showed that it was a complete ovum, about half a cm. in diameter. It consisted of a sac composed only of chorion and covered completely with chorionic villi. No amnion or germinal area was visible. Fig. 4 is a micro-photograph of a section through the ovum. The chorionic vesicle is shrunk so that its cut outline is convoluted. The villi are covered by typical epithelium, but the layer of epithelium belonging to the chorionic membrane itself has in most parts of the section become more or less

separated from the connective-tissue layer. The appearance of this ovum corresponds so closely to that described by Peters during the second half of the first week of pregnancy that probably the writer's specimen was only of 5 or 6 days' growth. Fig. 5 is a micro-photograph of a portion of the chorion and some villi, magnified to show their minute structure.

Dr. Eden has suggested two explanations of these cases, namely :—(1) That an ovum is fertilised, but perishes at an early period without leaving traces of its presence, while the "genetic reaction" in the uterus and in the organism progress as in pregnancy. (2) That some stimulus other than a fertilised ovum may lead to the formation within the uterus of a complete decidua, and may hold the menstrual functions in abeyance. The writer's case proves that the first view is correct for it is practically identical with the other 3 cases, with the exception that the ovum was found. The case was, strictly speaking, one of early "missed abortion" in which the decidua continued growing after the death of the ovum. The other cases, however, are instances of "incomplete abortion," in which the ovum and decidua reflexa were lost, the decidual lining of the uterus being retained and growing after the death of the ovum. If these decidual casts are always due to pregnancy the term "spurious abortion" ceases to be necessary. The practical importance of such cases depends upon their relation to ectopic gestation. When a decidual cast is passed without any portion of the ovum careful examination should be made to make sure that there is not an ovum in one of the Fallopian tubes.

BOSTON MED. AND SURG. JOUR., Oct. 31, p. 484.
Intermittent Hydrarthrosis.

By E. G. BREKETT, M.D., and F. J. COTTON, M.D.

CASE 1.—A man, aged 30, was in good health until 4 years before, when he began to suffer from occasional pains in the hips, thighs, and knees. Later swelling of the knees occurred periodically for a few days. The condition gradually became worse with great disability not only at the time of the swelling but in the intervals. Change of residence to various parts of the United States was of no benefit. The knees became swollen alternately with perfect regularity. There were at first feelings of heat and pain and tenderness in the joint with malaise. In 2 or 3 days the joint became filled with fluid. The swelling gradually disappeared in about 4 days. One knee was fixed on a splint, and 20 gr. of quinine were given daily. The intervals between the attacks were lengthened by 1 or 2 days, then an attack was omitted, the attacks became slighter and less frequent, and finally they disappeared. In the intervals the only symptoms were weakness of the knees and limitation of flexion and extension.

CASE 2.—The patient was a woman, aged 35, in good health. The first attack followed slight injury of the knee. The joint became swollen every 10 days for a period of 4 days. In the intervals there was no disability. The same treatment was adopted as in Case 1, but proved useless. The condition gradually yielded, in the manner of Case 1, to persistent treatment by arsenic, strychnia, and creasote.

The recorded cases of intermittent hydrarthrosis amount to 68. The malady is characterised by recurrent attacks of serous effusion into joints. Each attack occurs with calendar-like regularity, and lasts a definite

time which is peculiar to each case. The joint most frequently affected is the knee. In 41 out of 55 cases one or both knees were alone affected. The hip, shoulder, elbow, wrist, ankle, jaw, and spine have been involved. One joint alone may be affected for many years, or after a time others may be attacked simultaneously or alternately. Local heat and redness are usually, and tenderness is often, absent. In many cases there was no pain, only discomfort; in others pain was marked. In 1 case there were for years before effusion appeared periodic pains in various joints at monthly intervals. Much pain may occur in the earlier attacks and less in the later. Languor during and after the attacks is common. Headache, chilliness, and slight pyrexia have been described in a few cases. The duration of the attacks varies greatly, that most often recorded is 3 or 4 days. The extremes were daily attacks lasting an hour and attacks lasting from 19 to 21 days with intervals of 8 days. From the beginning of one attack to the beginning of another the most usual period was 14 days, the minimum 24 hours, and the maximum 3 months. A change of interval occurred in some cases—e.g., from 30 to 8 days, from 3 months to 11 days, from 7 to 3 days, and from 14 to 21 days. Sometimes this change followed a period of temporary immunity. In a few cases there was progressive shortening or lengthening of the interval. In some cases the periods corresponded with those of menstruation. The average age at the onset was 26; the extremes were 12 and 54. As to sex, there was a slight preponderance of females. The weak and the robust were apparently equally affected. Intermissions sometimes occurred and lasted for several years. In 5 cases the attacks stopped during preg-

nancy, but such intermission was not constant even in the same patient.

PATHOLOGY.—In the majority of cases there were no articular signs in the intervals. Sometimes there was a little thickening or laxity of the capsule or crepitation. Some cases have terminated in cronic hydrops, and in one, in which many joints were affected, the wrist alone became stiff. Free bodies occurred in some. Arthritis deformans, rheumatism, and Charcot's joint occurred in 4 other cases, but, according to the writer, were not results of the affection. Curiously, such considerable effusion recurring so often for so many years seems usually to leave no trace of damage in the joint. The disease has no complications, strictly speaking, and involves no danger to life. Its pathogenesis is unknown. Rheumatism, gout, or gonorrhœa may predispose to it. The view most generally accepted is that it is a vaso-motor neurosis. In favour of this are the concurrence of angio-neurotic œdema in some cases and of functional nervous disorders in others, and the influence of mental conditions on the attacks.

TREATMENT.—Many remedies have been recommended. Arsenic and quinine seem to be the best, but the prognosis is not good, and the permanent cures are few.

PRAG. MED. WOCH., May 2, 1901, p. 213.

By DR. CARL SPRINGER.

WIEN. KLIN. WOCH., June 27, p. 634.

By DR. H. STERNBERG.

Malignant Thrombosis of the Venæ Cavæ and Right Heart.

A woman, aged 44, entered hospital in Feb., 1898. Since Christmas, 1897, she had noticed on the left side of the neck a

small nodule, which steadily enlarged. In Jan., 1898, after a fall, she became aphonic. There was an adherent tumour of the thyroid gland, which completely covered the larynx and hyoid bone. Hard enlarged glands could be felt on either side. The manubrium sterni was dull to percussion. The trachea was rotated on its long axis. Both arms, and especially the left, were œdematous. The vocal chords did not move with phonation, and masses of new growth projected between them. There was great dyspnœa, which culminated in a suffocative attack on Feb. 24, 1898, and necessitated immediate tracheotomy. The trachea was found embedded in new growth, and many of the cervical veins contained malignant thrombi. Death occurred on May 6 from asthenia.

NECROPSY.—The thyroid gland contained a tumour of the size of a clenched fist. Every vein in the neck, beginning with the thyroid veins, was dilated and filled with an adherent mass of new growth. This neoplastic thrombus extended through both innominate and subclavian veins into the superior vena cava. Thence it projected into the right auricle, and through the auriculo-ventricular orifice, which it almost completely obliterated. At the apex of the right ventricle the growth was bent on itself, and passing upwards terminated close to the conus arteriosus. The right ventricle was slightly, and the right auricle moderately hypertrophied. The thyroid tumour had penetrated into the pharynx, œsophagus, larynx, and trachea, in the form of hemispherical or polypoid nodules. It was a spindle-celled sarcoma with scanty stroma.

The anatomical conditions explained the clinical symptoms in every detail. Œdema first appeared in the face, then in the arms; the thrombus spread from the neck downwards

to the subclavian veins. A systolic murmur appeared at the apex and base of the heart 3 months before death; it was doubtless due to tricuspid regurgitation.

Irruption of new growths into the larger veins is fairly common, and several cases have been reported in which the neoplasm extended into the right auricle. Thus Wölfler (*Langenbeck's Archiv*, Bd. xxix., p. 813) mentions that during the removal of a giant-celled sarcoma of the thyroid gland by Billroth the growth was seen to have penetrated the cervical veins. Post mortem it was found to extend continuously into the right auricle. A similar behaviour of a thyroid carcinoma is reported by Kaufmann (*Deutsche Zeit. f. Chir.*, Bd. ii., p. 425). Extension of the growths through the auriculo-ventricular orifice is, however, extremely rare; the only other case known to the writer is the one reported by Breus (*Wien. Med. Woch.*, Nov. 28, 1878). A man, aged 40, had a tumour of the right testicle. There were a double murmur over the heart, œdema, vomiting, and icterus. Post mortem a cystic myxadenoma was found which had penetrated the right pampiniform plexus and spermatic veins, and was continued thence through the inferior vena cava into the right auricle. It then passed in the form of gelatinous grape-like masses through a patent foramen ovale into the left auricle, and through the right auriculo-ventricular orifice into the right ventricle.

Dr. Sternberg reports 2 cases of malignant thrombosis of the inferior vena cava.

(1) An epithelioma of the right suprarenal body, in a woman, aged 60, penetrated the right renal vein, and extended through the inferior vena cava into the right auricle, into which it projected as a nodular mass. The inferior vena cava was apparently completely occluded by the growth, but microscopically the thrombus was

seen to be canalised. The larger branches of the hepatic veins were also thrombosed, and the surrounding hepatic tissue had undergone extensive cyanotic atrophy. The most prominent symptoms were ascites, œdema of the legs, and jaundice.

(2) In a woman, aged 70, who died with symptoms of chronic emphysema, dilated heart, and no indications of a tumour, a primary carcinoma of the left lobe of the liver was found post mortem. This had grown into the hepatic veins, and through them and the inferior vena cava, which it completely filled, reached the right auricle.

Irruption into the venous system is the rule in suprarenal growths, but is extremely rare in carcinoma of the liver. The symptoms due to complete malignant occlusion of the inferior vena cava may be slight, or, if a collateral circulation is established, absent. It is noteworthy that metastatic growths have not been numerous in the reported cases of malignant thrombosis.

NEUROLOG. CENTRALBL., Oct. 1, p. 888.

Stab-Wound of the Third Left Dorsal Nerve close to the Posterior Root-Ganglion.

By DR. ADOLF WALLENBERG.

Though the relation of each spinal segment to a corresponding motor and sensory region has only recently been ascertained, it has already enabled a number of tumours of the spinal cord and its membranes to be localised and removed. The following case is of interest in confirming the work of Head and others on the peripheral distribution of the spinal nerve-roots:—

A man, aged 31, was stabbed in the back with a knife in 3 places. There was a



FIG. 1.

lacerated contused wound, about $\frac{2}{5}$ in. long, which ran from above downwards and was situated over the most external portion of the left spine of the scapula (Fig. 1, *c*); exposed the underlying bone. A second wound, $\frac{4}{5}$ in. long, with sharply cut edges, ran vertically over the inner end of the spine of the scapula (Fig. 1, *b*), and a third was situated about 1 in. external to, and on a level with, the spinous process of the second dorsal vertebra; its inferior angle, from which a short cut extended more or less transversely, but slightly downwards and outwards, for 3 or 4 mm., was somewhat below this (Fig 1, *a*). There was considerable hæmorrhage from *a* and *b*, which was arrested by sutures. For some weeks the movements of the left arm were very restricted, owing to the deltoid being directly involved by the stab *c*, the trapezius and suprascapularis by the stab *b*, and the rhomboid and trapezius by the stab *a*. The wound *a* was covered with tin-foil and a skiagraph taken; it was then seen to extend from above the third rib downwards and forwards to the third left transverse process (Fig. 2). The third left intercostal space appeared to be narrowed, probably owing to the lower edge of the transverse process having been crushed or dislocated downwards.

There was pyrexia which reached 102.2° . Pus, small clots of dark blood, and a capsulated organism resembling Friedländer's pneumobacillus were expectorated. With the exception of diminished breath sounds over the left upper lobe for 24 hours after the injury there were no local signs,

and the writer thinks that the lung was contused by the dislocated transverse process rather than penetrated by the knife. There were also intense dyspnœa, a sensation as though the heart sometimes ceased to beat, and consequent great anxiety. The pulse was strong and regular, but remarkably infrequent—only 42 with a temperature of 101.3° . Once, however, it rose to 96 with a temperature of 102.2° . After the man had been out of bed 10 days the pulse-rate rose to 72 while standing and to 42 or 56 while lying.

As there had previously been no signs of atheroma of the coronary arteries and the pulse became normal in the course of 2 months, the bradycardia probably was connected with the injury. The dorsal nerves, from the second downwards, send from the anterior primary division immediately external to the spinal ganglion a communicating branch to the sympathetic system. According to Kyri the second

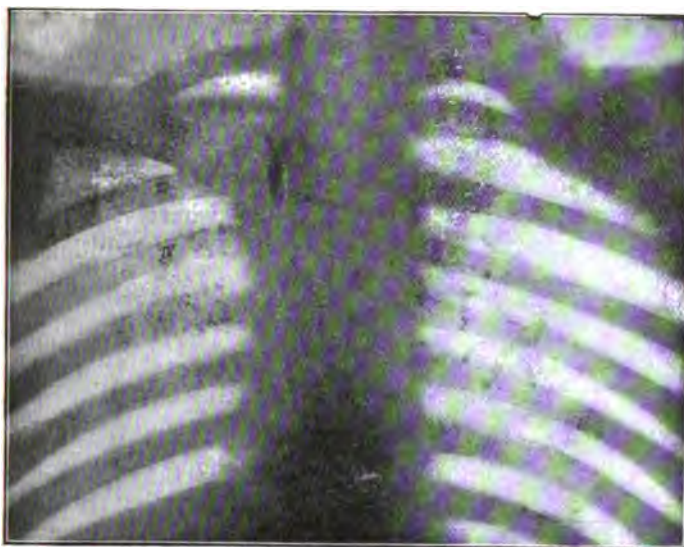


FIG. 2.

dorsal nerve is connected with the pulmonary plexus, the third with the pulmonary and aortic plexuses, and the fourth only with the aortic plexus. In addition the second and third dorsal nerves are connected indirectly with the cardiac plexus and the fourth dorsal nerve communicates

with the celiac plexus. The branches to the aortic and cardiac plexuses are probably analogous to the accelerator nerves of animals. It is therefore possible that the visceral branches of the third dorsal nerve were injured in this case, and owing to the abolition of accelerator influences the unrestricted action of the vagus produced bradycardia. The intense dyspnœa might be due to division of the branches to the pulmonary plexus, and the cardiac anxiety to interruption of the (indirect) communication with the cardiac plexus. Though these symptoms pointed to an injury of the third dorsal nerve near its exit from the vertebral canal, they did not enable a certain diagnosis to be made in the present uncertain state of sympathetic physiology. That the injury was severe and probably consisted of complete division of the third dorsal nerve was proved by the distribution of cutaneous hypæsthesia, which was present in 3 different areas:—(1) There was an oval area extending from the inner to the outer wound along the spine of



FIG. 3.



FIG. 4.

the scapula and most intense at the middle wound. The extent is shown by the shaded area in Fig. 1. Probably there was also an injury to the posterior divisions of the first and second dorsal nerves, for the upper limit of the area supplied by the third dorsal nerve does not usually extend above the spine of the

scapula. This hypæsthesia finally disappeared entirely. (2) A larger and more persistent area of hypæsthesia extended at first from the lower border of the second rib above to the fourth rib below, and laterally from just to the right of the left margin of the sternum to the left axilla, where it tapered off to an acute angle. Later it diminished somewhat and assumed the shape shown by the slightly shaded region of Fig. 3. The most marked hypæsthesia, which was over the cartilage of the third rib, corresponded to the peripheral distribution of the third dorsal nerve as figured by Head, though the lower area of hypæsthesia encroached on the territory supplied by the fourth and fifth dorsal nerves. (3) The most important hypæsthetic area extended along the inner surface of the left arm from the axilla to $3\frac{1}{2}$ in. above the internal condyle; it was rather more than 2 in. wide and 6 in. long (Fig. 4). This area corresponded so exactly to the distribution of the third dorsal nerve in the arm (as figured by Head), that from it alone a severe lesion of the third dorsal nerve could be diagnosed. In each area the hypæsthesia affected the sensations of touch, pain, and temperature, and there were occasional neuralgic attacks. The pupils were equal and reacted normally.

DEUTSCHE MED. WOCH., Jan. 2, p. 9.
**Temporary Colostomy in Chronic
 Dysentery.**

By Dr. A. NEHRKORN.

A man, aged 19, had noticed blood in the motions since an attack of constipation in Oct., 1900. In March, 1901, he abandoned all work on account of abdominal pains and tenesmus. On June 5, when he entered hospital, the

abdomen was somewhat distended, and there was an ill-defined sensation of resistance in the left iliac region. An enema brought away solid fæces with only a trace of blood. Castor oil produced diarrhœa and copious hæmorrhage. The abdomen was softer, though more tender, and the sigmoid flexure could be felt as a sausage-shaped movable tumour. The hæmorrhagic diarrhœa persisted in spite of an ice-bag over the sigmoid flexure, opium per os and per rectum, bismuth, tannalbin, stypticine, and, later, hot fomentations. Intestinal irrigation proved unsatisfactory as the bowel would not tolerate more than 10 oz. The fæces contained blood, remnants of food, mucus, and triple phosphates, but no tubercle bacilli or amœbæ. The general condition rapidly deteriorated. In the fourth week after admission the temperature rose. The weight had decreased from 110 to 85 lb., and the hæmoglobin from 75 to 30 per cent. The tenesmus was intolerable. Tannin and perchloride of iron enemata, hypodermic injections of ergotin and of 1 per cent. solutions of gelatine had no effect.

Internal treatment having failed, Prof. Czerny performed left inguinal colotomy on July 5. There was some ascites and the sigmoid flexure was œdematous and rigid. A coil of the flexure was fixed to the abdominal wound in the usual way, and opened 2 days later with the thermo-cautery. The intestinal wall was thickened and hypertrophied. The mucous membrane was covered with circumscribed, raised, hyperæmic patches, and there were 2 ulcerated patches in the proximal coil. After the operation all hæmorrhage immediately ceased. The local treatment consisted in irrigation of the colon once or twice a day with weak salicylic acid lotion, about 3 pints being introduced without discomfort. On the

third day after operation castor oil was given, and was followed by a copious stool free from blood. On Aug. 23 the patient left the hospital with a functionally satisfactory artificial anus. Seven weeks later he weighed 175 lb., hæmoglobin had risen to 75 per cent., appetite was excellent, and the bowels acted well. On Oct. 18, 3½ months after the operation, the artificial anus was closed, and on Nov. 18 the patient was in good health with normal fæces.

The literature of cases of dysentery treated surgically is at present scanty, and colotomy has perhaps been performed more frequently for membranous colitis (Robinson, Hale White, and Felix Franke). For dysentery it was first advised by Stephan, of Amsterdam (*Berlin. Klin. Woch.*, 1896), and performed by Von Schilfgaard in a case very similar to the writer's and with like results. An operation in chronic dysentery is indicated either if the disease progresses in spite of internal treatment, or if internal treatment becomes impossible owing to drugs disagreeing, and to sufficiently copious irrigations being painful and consequently impossible. The nature of the operation depends on the case. If the whole of the large intestine appears to be diseased, right inguinal colostomy (cœcostomy) is indicated in order to give the whole of the diseased mucosa rest. If, after the abdominal incision it appears certain that the disease is limited to short sections of the colon, total exclusion (*Ausschaltung*) of these sections by entero-anastomosis may be preferable to the formation of an artificial anus. Left inguinal colostomy should be reserved for cases in which it can be ascertained before the operation that the sigmoid flexure is the seat of the disease, and in which the object of the operation is to enable local treatment of the diseased mucosa to be carried out rather than

to exclude more or less extensive sections of the colon from the irritation of passing fæces. The result showed that this was the most suitable method in the writer's case.

WIEN. MED. WOCH., Nov. 16, 1901, p. 2155.

By REGIMENTAL-SURGEON DR. KOZLOVSKÝ.

WIEN. KLIN. RUNDSCHAU, Dec. 6, p. 923.

By DR. W. KOPFSTEIN.

WIEN. KLIN. WOCH., Dec. 12, p. 1229, Dec.

19, p. 1261, and Dec. 26, p. 1299.

By DR. F. NEUGEBAUER.

**Spinal Analgesia by Injections of
Eucaine-Alpha and Tropacocaine.**

The method of producing analgesia by intrarachnoid injections continues to excite great interest. Dr. Kozlovský gained his experience in the clinic of Prof. Maydl, of Prague, in which this form of anæsthesia was employed in over 100 cases between the beginning of Oct. and the middle of Dec., 1899, and has since been used in many hundred more. Cocaine was employed in the first 5 cases, but as it produced alarming symptoms, and, in one case, dangerous collapse, it was abandoned. After other preparations, such as nirvanine, had proved unsatisfactory, eucaine-alpha hydrochloride gave excellent results. It is now regularly employed in the clinic. It occasionally produced unpleasant symptoms, such as headache, pyrexia, nausea, and vomiting, but these were never so severe as after spinal cocainisation, or after even ordinary chloroform anæsthesia. Collapse never occurred. As regards technique the writer advises that if the intrarachnoid pressure is high, as shown by the fluid spurting vigorously through the cannula, the injection of eucaine should be postponed until a few c.c.

have escaped; by this means the sequelæ, and especially the headache, may be frequently averted.

The method would probably prove of great value in military surgery. It has no contraindication except old age, and may be employed in bronchitis, pneumonia, and heart disease. Again, analgesia may be induced by the operator and no anæsthetist is required. Analgesia is complete 4 to 10 minutes after the injection of 2 to 3 c.c. (34 to 51 minims) of a 2 to 3 per cent. solution. In the very exceptional cases in which satisfactory analgesia did not result general anæsthesia was rapidly procured by an unusually small quantity of chloroform. The method is suitable for all operations on the lower limbs, the intestines, and other organs below the costal arch.

Kopfstein on the other hand, found Schering's alpha-eucaine totally unsuitable. In an operation on a sacral dermoid in a man, aged 58, anæsthesia was incomplete, and a few minutes after the injection violent headache, nausea, and alarming collapse supervened. The headache persisted for 22 hours, and there were colic, neuralgia, pyrexia, and intense pain in the wound. On the third day the patient recovered. In a second case, in a man, aged 28, anæsthesia during Lisfranc's disarticulation was unsatisfactory. Before the operation was completed both legs were paretic, and there were sudden collapse, vomiting, colic, and general tremors, which culminated in a rigor and tonic spasms of the arms. The wound was intensely painful. In the third case there were vomiting and collapse with subsequent headache, pyrexia, and pneumonia; analgesia was incomplete. In the fourth case, an operation for fistula in ano was quite painless. Sensation persisted, however, unimpaired in the legs and feet. The pyrexia and headache were of short

duration, but 4 months later both legs were parietic and paræsthetic, the knee-jerks were exaggerated, and there was lumbar pain. The amount of alphaeucaine employed in each case was 0.03 gm. (under $\frac{1}{2}$ gr.) in a sterilised solution. Tropacocaine was then substituted in doses of 0.04 to 0.05 gm. (under $\frac{3}{4}$ gr. to $\frac{1}{2}$ gr.). It was employed in 40 cases, which as regards results fell into 3 categories :

(1). Those in which analgesia was complete and there were no complications or sequelæ. These included Bassini's operation for the radical cure of hernia in 2 old men to whom it would have been inadvisable to give chloroform, 3 in operations for strangulated femoral herniæ, in old women, excision of the rectum for cancer, in which the operation lasted $1\frac{1}{2}$ hours, and amputation of the legs in old men with advanced atheroma, 27 in all.

(2). Those in which the anæsthesia was complete, but in which a violent reaction with vomiting, headache, paresis of the lower limbs, dyspnœa, colic, and tinnitus followed. Collapse occurred in one case, and was followed by anorexia and debility of 3 weeks' duration. There was never pyrexia. Five cases belonged to this class.

(3). Those in which, as no anæsthesia whatever was produced and the intended operation was abandoned (8 cases). The injections produced headache, vomiting, and violent pains in the vertebral column. Here again, no pyrexia was noted.

Thus anæsthesia was produced by tropacocaine in only about 80 per cent. of all cases. The writer concludes (1) that tropacocaine is less dangerous than eucaine, (2) that the method is unsuitable for urgent cases owing to the possible waste of time if anæsthesia fails to appear, (3) that collapse and other sequelæ are less common after a meal including a stimulant, such as black coffee or wine,

and that the injections should never be given during fasting.

Neugebauer employed 1 c.c. of Hackenbruch's solution (cocaine and eucaine $\bar{a}\bar{a}$. $\frac{1}{2}$ per cent.) in 2 cases; in the first the result was excellent; in the second there were alarming symptoms suggestive of meningitis. Tropacocaine was then employed in 60 cases. The solution was sterilised by boiling without impairment of its efficacy. The first sign of analgesia appeared usually in the perineum, often within one minute of the injection. In 2 young and healthy men there were severe but brief symptoms of intoxication after 0.05 gm. ($\frac{3}{4}$ gr.) of tropacocaine was given, which the writer attributed to the syringe having been inadvertently placed in carbolic lotion. In another case in which an abscess of the thigh was to have been incised, the analgesia remained limited to the perineum, in spite of a dose of 0.07 gm. (about 1 gr.) and it was found necessary to administer ether. In another case, after the injection of 0.05 gm. ($\frac{3}{4}$ gr.) the anæsthesia remained limited to the perineum, the posterior aspect of the thighs, and the adjacent surface of the nates. A second injection of 0.025 gm. (over $\frac{1}{2}$ gr.) was given 12 minutes later, and an operation on the foot was then performed painlessly. Analgesia of the perineum is the rule after an injection of 0.05 gm. ($\frac{3}{4}$ gr.) but in one case 5 minutes after the commencement of an operation for hæmorrhoids sensation returned in the anal region and infiltration anæsthesia was employed. After the perineum the adjacent parts of the nates and the posterior aspects of the thighs became analgesic, a little later the toes and feet, and finally the inguinal region and abdomen. It follows that for a time islands of algesic skin are interspersed between the analgesic areas. They are usually not persistent, though in one case the analgesia reached from the toes only to the middle of

the thighs anteriorly. The posterior surfaces became analgesic more rapidly and constantly than the anterior, and the analgesia often extended higher behind than in front. As to the depth of the analgesia, a fully analgesic skin incision indicated in the lower limbs a painless operation on the deeper parts, including the bones; this did not apply, however, to the scrotum and abdomen. The application of an Esmarch's tourniquet in bloodless operations had no influence on the development of anæsthesia, but usually caused it to be unusually protracted. The doses employed were 0.0375 gm. (over $\frac{1}{2}$ gr.) in one case; 0.04 gm. (under $\frac{2}{3}$ gr.) in 2 cases; 0.05 gm. ($\frac{3}{4}$ gr.) in 39, and 0.06 gm. (nearly 1 gr.) to 0.1 gm. (about $1\frac{1}{2}$ gr.) in 18. Doses up to and including 0.05 gm. were insufficient in all except the shortest operations on the abdominal and scrotal regions, such as the incision of buboes and phimosis, and they sometimes failed even in these. In 4 operations on the foot, leg, thigh, and perineum, respectively, the analgesia was very incomplete, after doses of 0.04 to 0.05 gm.; in 2 of these satisfactory analgesia was procured by subsequent injections of 0.025 gm. and 0.05 gm. respectively. These cases were, however, exceptional, as was the one in which after the smallest dose ever employed, total vaginal hysterectomy of an hour's duration was performed absolutely painlessly. From the middle of the thighs downwards, analgesia was usually sufficiently deep and prolonged for all operations not exceeding 1½ hours in duration. The larger doses occasionally produced analgesia extending as high as

the nipple or even the chin, but this result could not be depended on for operations above the inguinal region. In contrast to the slight gain in the extent of analgesia were the frequency and severity of toxic symptoms after doses exceeding 0.05 gm.: rigors, pyrexia, paresis, or paralysis of the legs occurred in 55 per cent. of the cases. After doses not exceeding 0.06 gm. the sequelæ were usually slight, and after an operation in the morning usually disappeared towards evening; in 13 cases there were no toxic symptoms whatever. Although the paralysis never lasted more than a few hours the writer gives 0.06 gm as the upper limit of safety in tropacocaine spinal anæsthesia. In spite of the uncertain action, which appears to have no relation to age, sex, or the nature of the disease, the writer considers that sterilised solutions of tropacocaine are a reliable and safe means of producing analgesia of the lower limbs, perineum, and neighbouring parts, but are unsuitable for laparotomy or operations above the groin. The patients should stay in bed for several days after the injection.

The remarkably diverse results reported by different authorities using an identical technique, and the uncertainty of the analgesia produced, show that the method of intradural injections has no advantages over general anæsthesia by chloroform or ether, except, perhaps, in military surgery.

See also "REVIEW," Vol. III., pp. 501, 521, 598, 634, 698, and 699, and Vol. IV., pp. 47, 55, 95, and 255.

M E D I C I N E .

Fatal Frambœsial Syphilis.—Jonathan Hutchinson, F.R.S. (*Polyclinic*, Aug., p. 59).—An unmarried barmaid was seen on March 4. Her illness began about Christmas, when a miscarriage was suspected. The face was covered with thick heaped-up crusts, of which some were as large as cherries, others no bigger than peas. They were of a dirty yellow colour, and not in the least limpet-shell like, but rather of the bee-hive form. They were especially large on the upper lip and cheeks, but were present on the forehead and all exposed parts. On the arms, legs, and thighs, placed with accurate symmetry, were other spots on which the crusts were much smaller, some being of varioloid type. There were also a few on the trunk. The genitals showed traces of recent sores, and the inguinal glands were enlarged. The patient was emaciated and very pale. There was no trace of sores in the throat or mouth. She had taken mercury in small doses. There was a history of symptoms of right hemiplegia, which had passed away. Mercury was prescribed. On March 20 the gums were decidedly touched, and she had suffered from diarrhœa. The eruption was much better. On the limbs and trunks the varioloid pustules had disappeared, and many of the crusts on the face had fallen, leaving stains. On account of the diarrhœa and ptyalism the mercury was suspended, and chlorate of potash and tonics were ordered.

On March 27 the eruption consisted of soft granulation masses covered thickly with a pus-crust, and differed in no respect from that which is claimed to be characteristic of tropical yaws. She was very feeble. Her face was covered with dirty yellow crusts, which concealed masses of

soft granulation, and the stains of patches from which crusts had fallen. There was no sore throat, and the eruption on the trunk and limbs had to a large extent disappeared. No mercury had been given for a fortnight. Mr. Finucane, of Fiji, who saw the patient, stated that the conditions were exactly like those of the disease known in Fiji as "yaws." A little later death suddenly occurred.

The eruption had yielded to the mercurial treatment (which had been resumed), but the debility, weakness, and anæmia had increased. There had been only slight ptyalism, but diarrhœa had been troublesome for some days. Death during the secondary stage of syphilis is extremely rare. Mr. Hutchinson has seen more than a few cases in which death was threatened, but he does not remember one in which it occurred. Probably in this case it was due to syncope from exhaustion. The eruption was most severe. Next, perhaps, to the bullous forms (syphilitic pemphigus) the varioloid and frambœsial indicate the most dangerous types of syphilis—at any rate in English patients. Those who have observed yaws (which Mr. Hutchinson regards as frambœsial syphilis) in its native haunts give varying reports. Some speak of it as usually a mild disease, but the majority admit that it is not infrequently fatal. It is to be noted that this patient never had sore throat or other affection of the mucous membranes. This, Mr. Hutchinson thinks, is the rule when the disease falls with especial severity upon the skin, and it is one of the facts which has strengthened the opinion that yaws and syphilis are distinct maladies. But sore throat is often omitted from the *role* of syphilitic phenomena.

A Family Form of recurring Epistaxis, with Telangiectases of the Skin and Mucous Membranes.—William Osler, M.D. (*Johns Hopkins Hosp. Bulletin*, Nov., p. 1901).—A hereditary form of epistaxis has been described by Babbington (*Lancet*, 1865, ii., p. 362.). The association of epistaxis with angiomas of the nasal septum has long been known; but of the associated condition of multiple telangiectases of other mucous membranes the writer has found only the following report by Rendu (*Gaz. des Hôpitaux*, 1896, p. 1322):—A man, aged 52, whose father had repeated attacks of melæna, and whose mother and brother had been subject to epistaxis, was admitted in a condition of profound anæmia, having had epistaxis for three weeks. He bled from the nose first at the age of 12, and since had been subject to epistaxis particularly in the spring. He had never had any other hæmorrhages. On the nose, cheeks, and upper lip, were numerous small red spots due to dilatation of vessels. Similar small telangiectases were seen on the internal surfaces of the lips and cheeks, and on the tongue and soft palate. None were seen on the mucous membrane of the nose.

Dr. Osler describes 3 cases of which 2 occurred in a family in which 7 members suffered from epistaxis. Both patients had suffered from epistaxis since childhood, and presented numerous punctiform angiomas on the face and mucous membrane of the nose, lips, cheeks, and tongue. The third patient had suffered much from recurring epistaxis; the telangiectases were most abundant on the body, and were numerous also on the mucous membranes. This condition has nothing to do with hæmophilia, with which it has been confounded.

CASE 1.—A man, aged 57, was admitted to the Johns Hopkins Hospital on May 31, 1897. One sister died at 59, of Bright's disease. She had suffered from epistaxis since childhood. The patient had one child, aged 13, who bled occasionally from the nose. The patient had been a

moderate drinker. He did not remember having had epistaxis before his tenth year, then attacks, which were not severe, recurred almost daily. At 37 the condition became much more serious, and for nearly 3 years he was unable to work on account of the weakness and anæmia induced. He bled indifferently from either nostril. Latterly the bleeding had become aggravated, and he was consequently very anæmic.

The face was puffed, suffused, and anæmic; the feet and legs were swollen. Blood examination gave 2,980,000 erythrocytes, 8,000 leucocytes, and hæmoglobin between 15 and 20 per cent. The coagulation time, as taken by Wright's tubes, ranged from 5½ to 7 minutes. The face presented a remarkable appearance, owing to numerous dilated venules and capillary and venous telangiectases. They were most abundant on the ears, the skin of which presented a striking appearance, partly from the dilatation of the venules, which could readily be seen, and partly from the bright red capillary telangiectases. There were some dilated venules on the nose and cheeks, and the lips presented a number of angiomas, particularly on the mucous surface, and at its junction with the skin. There were one or two small ones on the nostrils, and several on the mucosa of the septum, particularly on the cartilaginous portion. The tongue showed a number of telangiectases on the tip and along the edge for a little distance. The s.g. of the urine was 1010; it contained neither albumin nor casts. The legs were swollen in the middle of the calves: there were dilated venules on the outer aspect. The edge of the spleen could just be felt. The bleeding stopped shortly after admission,

On May 25 he had a slight attack of epistaxis, which lasted about 30 minutes. The general condition had much improved. The œdema had disappeared from the extremities. The blood had improved, and on the 25th the red corpuscles were 3,224,000.

The patient reported himself at intervals in 1898, 1899, and 1900. He occasionally had epistaxis, which lasted for a few hours at a time.

Hysterical Breast.—M. Lannois (*Nouvelle Iconographie de la Salpêtrière*, No. 5, p. 402).—A nurse, aged 47, who was of neurotic ancestry, and had two neurotic daughters, suffered from violent pains in the head, toothache, and occasional pain in the right breast. From the age of 11 she had from time to time *globus hystericus*. She had never had violent hysterical fits, but when her headache was severe she had periods of excitement and fits of weeping, without loss of consciousness. Of mercurial temperament she passed readily from high to low spirits. Occasionally she was seized with sudden fits of ravenous hunger, and sometimes had polyuria with increased frequency of micturition, both by day and by night. There was deep hemianæsthesia on the right side of the body. The tendon reflexes in the upper limb were exaggerated, but the patellar reflex was normal. There were hyperæsthetic areas at the level of both ovaries, and above and below the breasts. The visual fields were sometimes a little diminished. The most curious symptom was great hypertrophy of the breast (Fig.). Whilst the left breast was relatively small and flaccid the right was voluminous, pear-shaped, and pendulous. The areola was deeply pigmented and much larger than the left. The right nipple was also the larger.



produced no effect. At the upper part of the breast a hard round mass of the size of a Tangerine orange could be felt. She said that in May, 1900, she had begun to feel a sensation of rolling and smarting in the breast. Simultaneously the breast enlarged considerably and assumed a violet colour. The pain increased, she felt a continual burning sensation in the breast, and often had shooting pains in it. Paroxysms of pain coincided with similar pain in the ovarian region, which extended to the whole of the left side. Several surgeons diagnosed carcinoma, and suggested removal of the breast; but M. Ollier opposed this, and applied flannel bandages, which diminished considerably the size of the

Measurement of Breasts in cm.	Right	Left
Circumference (through the nipple)	.. 22	16
Transverse diameter	.. 7	4
Vertical diameter	.. 8	5½

Pressure on the left breast revealed only two hyperæsthetic areas, but when the right breast was grasped, the patient became excited, ground her teeth, and said she was unnerved. The same symptoms were elicited on superficially pinching the skin of the areola or the nipple. Pinching the skin of the breast itself

gland. The size of the breast troubled her slightly. When tired or annoyed, the breast felt as heavy as a stone.

The writer considers that the hypertrophy was simply an hysterical phenomenon and quotes several similar cases. The differential diagnosis from carcinoma is important for excision of the breast has been performed under the mistaken diagnosis of malignant disease, and the painful symptoms have still continued. Spontaneous recovery may occur. Treatment should be psychical and by suggestion.

Senile Pruritus of the Tongue.—E. Baumgarten (*Ungar. Med. Presse*, Dec. 10, p. 714) describes a form of pruritus which affects the tongue of old people, generally women, either alone or with pruritus of the skin. The diagnosis of pruritus linguæ is justified only after all conditions which can account for the itching have been excluded. Paræsthesiæ linguales may depend on constipation, diabetes, ill-fitting artificial teeth, hypertrophy of the lingual tonsil, varicosity of the veins at the base of the tongue, pregnancy, hysteria, neurasthenia, tabes dorsalis, and a variety of other conditions. Neuralgia of the tongue is very rare. Occasionally lingual sensations precede an eruption of herpes or pemphigus. Thus an elderly woman had pain in the tongue for a week. Desquamation of the whole lingual surface followed; later pemphigus vulgaris appeared on the body and proved fatal. True pruritus linguæ senilis has, however, no discoverable relation to any other disease or condition except pruritus of the skin. It is rare: only 2 cases have been observed by the writer in 3000 out-patients. In the first case there was a constant sensation of itching and burning in the tongue of an old woman. Treatment, including iodide of potassium, cocaine, massage with balsam of Peru, and electricity, was useless. In the second case, a woman, aged 68, had pain.

burning, and itching in the tongue. The pruritus increased steadily in severity. The pain was bearable but the itching intolerable. Soon the pruritus affected also the arms, and eventually spread to other parts of the body. The lingual symptoms then became less noticeable. The nature of the disease is unknown, and treatment appears to be useless.

The Clinical Importance of Chronic Pentosuria—Bial and Blumenthal (*Deutsche Med. Woch.*, May 30, 1901, p. 349).—Pentose was first demonstrated in the urine by Salkowski and Jastrowitz in 1892 (*Centralbl. f. die Med. Wiss.*). This sugar which contains 5 atoms of carbon ($C_5H_{10}O_5$), though an apparently rare constituent of urine (only 5 cases of chronic pentosuria have been reported) is of great importance, since it reduces Fehling's and Nylanders' solutions, and gives a positive reaction with the phenylhydrazine test (the production of yellow needles of phenylglucosazone). It is, therefore, very liable to be mistaken for glucose. The distinction is possible because pentose is neither fermentable nor dextro-rotatory. The constant excretion of a carbohydrate, which is not normally present in the urine, points to some anomaly of metabolism, just as the constant excretion of glucose distinguishes diabetes mellitus from the occasional glycosuria of otherwise healthy subjects. If large quantities of pentose be eaten temporary pentosuria may result. Bial and Blumenthal have investigated the question whether pentosuria has any relation to diabetes mellitus. In the first reported case of pentosuria, in which pentose was excreted only temporarily, glycosuria or intermittent diabetes mellitus was also present. Külz and Vogel have found minute traces of pentose with glucose in undoubted cases of diabetes mellitus. In a case of chronic pentosuria the writers made a number of experiments on metabolism, with the following results: In pentosuria, unlike diabetes, hexatomic sugars

(glucoses) were completely oxidised. Thus of 100 gm. of grape sugar (dextrose) taken fasting no trace appeared in the urine. Lævulose behaved similarly, and of 100 gm. of galactose only 5 gm. appeared in the urine. An injection of 0.5 gm. of phloridzine caused 21 gm. of dextro-rotatory sugar to be excreted, but had no influence on the usual excretion of pentose; thus phloridzine, just as in health, caused such rapid excretion of the circulating sugar that oxidation was impossible. The daily excretion of pentose—from 4 to 6 gm.—was thus uninfluenced by increased supply of carbohydrates. It was also uninfluenced by food containing much nuclein, such as thymus gland, which is a possible source of pentose, since it can be isolated from the carbohydrate molecule of nuclein by the action of acids. To test the question whether pentose is a normal decomposition product of albuminous metabolism which does not, however, appear in the urine because normally completely oxidised, 50 gm. of artificial pentose (arabinose) were administered. Of this only 6 gm. were excreted in the urine, so that the oxidation of pentose is just as complete in a pentosuric as in a healthy subject. The seat of formation of pentose is unknown. It is not formed in the kidney for it is present in blood obtained by venesection.

Fatal Paraffin Oil Poisoning.—Arthur A. Martin, M.B., Ch.B. (*Quarterly Med. Jour.*, Nov., p. 52).—At 3 p.m. a man was admitted to hospital who had drunk half a pint of paraffin oil half an hour previously. After a few minutes he fell down and rapidly became unconscious. He had been in the habit of taking tablespoonful doses for some months previously as a "cure for rheumatism."

The face was deeply cyanosed, the limbs were cold, and the pulse was 86 and barely perceptible. The respirations were sighing, laboured, and shallow. The pupils were widely dilated, and reacted sluggishly to light. He exhaled a strong

odour of paraffin. He was still unconscious and could not be roused. As he was so collapsed such depressant emetics as zinc sulphate and apomorphine were not given. A soft rubber tube was passed into the stomach. Six ounces of paraffin oil flowed out and was followed by ordinary stomach contents. The stomach was washed out with warm water, milk, and liquor calcis saccharatus. Ether, brandy, and strychnine were given hypodermically; he was surrounded with hot bottles and given oxygen to inhale.

4.15 p.m. The pulse was 100 and better; the cyanosis was still extreme; respiration was shallow and laboured; the right heart by percussion was found to extend a finger-breadth to right of sternum.

6.15. Pulse 120; temperature 99°. Coarse mucous râles heard over both front and back of chest. Cheeks blow out on expiration. First sound at apex very weak. Given $\frac{1}{30}$ gr. strophanthin.

8. Restless, spoke some unintelligible words and opened eyes. Pulse 124; temperature 101°.

9. Pulse volume and tension better. Still deeply cyanosed.

12. Spoke sensibly, and complained of agonising pain in epigastric region. Doubled up with the pain. Cyanosis less. Given $\frac{1}{4}$ gr. of morphia. Oxygen inhalations still carried out. Pupils dilated. Breath still laden with paraffin vapour.

3 a.m. Weaker. Tendency to Cheyne-Stokes' respiration. Again unconscious. Given liq. strychninæ, 4 m., hypodermically. Urine drawn off with catheter smells strongly of paraffin, and particles of oil float on the surface.

9 a.m. Sinking. Extremities cold. Respiration sighing and laboured. Coarse gurgling mucous râles heard all over chest. Still cyanosed and unconscious. Pupils dilated.

10.30. Died.

NECROPSY.—The right heart was engorged with dark venous blood. The walls of the heart were flabby and soft. There were signs of old endocarditis at the mitral and aortic valves. The lungs were greatly congested. The air passages

were filled with blood-stained mucus, and the bases of lungs were œdematous. The trachea contained blood-stained mucus and its mucous membrane was much congested. The pharynx and larynx showed only slight congestion. The mucous membrane of the œsophagus was pale and sodden and looked like wet white blotting paper. There were several petechiæ on the posterior wall towards the gastric end. The stomach contained milk and paraffin. The mucous membrane was apparently uninjured. The liver was large and fatty.

The most striking points in the necropsy were the intense congestion of the lungs, the sodden appearance of the œsophageal mucous membrane, and the abrupt ending of this condition at the cardia. Did the congestion of the lungs account for the marked cyanosis, which was present from the outset? If so, it developed extremely rapidly. The large flabby heart, showing old endocardial mischief, was probably a factor in determining this backward congestion. The shock following the taking of such a poison must have considerably weakened an already weak organ. Were the œdema and congestion of the lungs in any way due to the elimination of the paraffin vapour through these organs? It is more probable that some of the paraffin entered the air passages and acted as a direct irritant. A noteworthy point is that within 12 hours of ingestion paraffin was detected in the urine. In one of the recorded cases of paraffin poisoning this condition was noticed on the second day. Probably the stomach was not affected because it was well filled when the paraffin was taken, which consequently floated on the contents and did not come much into contact with the mucosa. The writer could find only 6 recorded cases of paraffin oil poisoning in adults and 3 in children. None were fatal.

Facial Herpes following the Intra-Spinal Injection of Cocaine.—Ch. Achard and Ch. Laubry (*Gaz. Heb. de Méd. et de Chirurg.*, Nov.

28, p. 1129).—Injections of cocaine into the spinal canal have produced some curious phenomena. The writers record 3 cases of herpes caused by it.

CASE 1.—A man, aged 39, was given a lumbar injection of 1 cgm. of hydrochlorate of cocaine to relieve the pain of sciatica. There was no escape of cerebro-spinal fluid, and the pain was not relieved. A second injection was equally ineffectual. A week later another injection of 1 cgm. was given, and though there was no escape of cerebro-spinal fluid the pain was at once relieved and the patient could walk and stand on the affected limb, which he had not been able to do for 8 months. But an hour and a half after the injection he was seized with violent headache, which became worse at night and was accompanied by delirium and copious vomiting. The sciatic pain returned with the headache. Three days after the injection, without pain or itching, there appeared on the lips and in the mouth an herpetic eruption. The eruption was situated on the muco-cutaneous junctions of both lips, on their inner aspect, on the gums, and on the right half of the palate near the middle line. The rash spread symmetrically along the posterior surface of the alveolar margin, the soft palate, and the pillars of the fauces. Simultaneously a similar eruption appeared on the skin of the right frontal region. The rash ran a normal course and gradually disappeared. Subsequent intra-spinal injections did not produce another outbreak.

CASE 2.—A house-painter, aged 21, was given an intra-spinal injection of 1 cgm. of hydrochlorate of cocaine to relieve an attack of lead colic. Violent headache and vomiting resulted, but the colic was relieved. Two days later an injection of 2 cgm. was given. In the evening, after burning and shooting pains in the face, particularly round the nostrils, lips and chin, herpes appeared on the two naso-labial ridges, the anterior surface and the mucous junction of the lips, and on the chin. Next day two vesicles appeared on the under surface of the tongue. The rash yielded readily to treatment.

CASE 3.—A man, aged 41, with sciatica, was given an intra-spinal injection of $1\frac{1}{2}$ c.c. of a 1 per cent. solution of cocaine, and next day one of 1 c.c. Two hours afterwards he was seized with intense headache and nausea. Two days later, when the headache and nausea had disappeared, herpes appeared on the skin and mucous surfaces of the lower lip, the chin, and the lower gum. A slight pricking sensation accompanied the rash. The eruption disappeared in 3 days without leaving a trace. Subsequent injections of cocaine were not followed by an herpetic outbreak. The writer concludes that these cases help to establish the toxic and neuro-trophic origin of herpes.

Septic Erythema during Follicular Tonsillitis.—Thomson (*St. Petersburg, Med. Week.*, No. 35, 1901, p. 397).—Nine out of 19 persons in a house were seized with an acute illness of sudden onset. In 6 cases the course resembled that of more or less severe influenza; in 3 children, there was severe follicular tonsillitis. In one of these there was bilateral otitis, in the other two an erythematous eruption which was most marked on the limbs, less conspicuous on the back and abdomen, and absent from the chest and face. It consisted of a vivid red, somewhat livid, slightly raised erythema, which became confluent over the knees and backs of the hands and feet. It resembled closely that reported and figured by Debio in a case of follicular tonsillitis ("REVIEW," Vol. III., p. 352). One patient, a girl, aged 3, recovered after a severe pyrexial illness (septicæmia) of 20 days' duration. During convalescence there was hyperæsthesia of the skin of the abdomen and legs, and branny desquamation of the knees. The other, a boy, aged 7, died on the fourth day of the disease. The cervical glands were greatly swollen, and shortly before death there was rigidity of the cervical muscles and slight trismus. The eruption appeared within 24 hours of the rise of

temperature. This eruption could not be confused with that of any known infectious disease, and was probably due to septic intoxication. From this house an epidemic of influenza and follicular tonsillitis spread to the neighbouring village, but there were no further cases of septic erythema.

Acetanilide Poisoning.—Dr. Phillip Brown (*American Jour. of Med. Sciences*, Dec., p. 770).—A man, aged 37, took 60 grains of acetanilide in 6 powders within a few hours. He became slightly delirious and complained of pain in the head and abdomen. There were pyrexia, rapid pulse, constipation, slight jaundice, nausea, and vomiting. Calomel in small doses followed by salts produced a copious but bloody motion and the urine was dark red. On the second day the pulse was 78, soft and compressible; the temperature was 100.2° ; the lips and nails were cyanotic; and there was slight jaundice. There were pain in the left side of the abdomen and tenderness in the epigastrium and region of the left kidney. The skin was moist and the gums were bluish. The urine was strongly alkaline and, from the presence of hæmatoporphyrin, was deep red—nearly black. There was a small sediment containing granular casts. On boiling a large coagulum formed. On the third day only 150 c.c. of urine were passed; after this there was complete suppression. There was great thirst and everything that was given was vomited, so that nutrient enemata had to be used. Though nothing was taken by the mouth for days the vomiting continued. Cough and expectoration were constant. There was slight delirium and the reaction of the pupils to light became more and more sluggish; in the end the pupils were widely dilated. The reflexes were first exaggerated; then they gradually disappeared. The extremities were constantly cold. The temperature fell slowly to normal. On the fourth day the heart began to fail, and the temperature was subsequently subnormal,

reaching 95.5° in the rectum on the seventh day. There were alternately constipation and diarrhoea, and the fæces were occasionally blood-stained; after the fourth day hæmoglobin and broken-down blood cells were constantly present. The skin became more and more jaundiced. On the sixth day two dark red fluid motions were followed by the passage of sheets of mucous membrane several square inches in size, and two large clots of blood, which together were about the size of a placenta. The patient was greatly prostrated, and seemed to have pain all over the abdomen. The thighs were constantly flexed, and the expression grew more anxious. After this he sank rapidly and died on the eighth day.

Examination of the blood showed destruction of the erythrocytes which finally were reduced to 1,166,000 per c.m.m., while the leucocytes were 66,450 and the nucleated red cells 22,150. The alkalinity of the blood was diminished by 80 per cent. The necropsy showed acute nephritis and intestinal catarrh, but did not explain the melæna.

Infantile Scurvy Simulating Acute Epiphysitis.—Dr. E. Cautley (*Lancet*, Jan. 4, p. 24).—A female child was fed on cow's milk and barley-water during the first 2 months of life, and afterwards on condensed milk and barley-water. At the age of 5 months were added "Brighton biscuits." At the age of 12 months she came under observation. The left arm and shoulder had been swollen for 2 weeks. The child was pale and ill, and cried when moved or touched. Four teeth were cut, and the two upper lateral incisors showed signs of eruption. The lower gums were normal, but the upper, round the teeth, were swollen and dusky red. There was extensive swelling of the left shoulder, extending half way down the upper arm. The swelling seemed to be in front of the joint and under the periosteum of the humerus. There were moderate signs of rickets—beaded ribs and enlargement of the epiphyses, especially of

those of the knees which were much swollen and very tender above the condyles. Exploration of the shoulder confirmed the diagnosis of scurvy, pure blood being obtained. In the course of 2 days the swelling extended downwards to the elbow. Recovery took place under anti-scorbutic diet, without drugs, but considerable thickening of the left humerus, especially of the lower half remained. Pyrexia was slight and irregular.

Wandering Œdema.—B. Smith, L.S.A. (*Brit. Med. Jour.*, June 8, p. 1403).—A man, aged 28, married, has been under treatment since last June, when he first noticed a swelling of the eyelid. He has had irregular attacks ever since, usually two each week, for 3 weeks, followed by a month's interval. The lesions take the form of translucent, painless swellings. They involve the face generally, but have occurred on the ear, forearm, prepuce, etc. They begin at night, and have completely faded by the following afternoon.

The patient was of sedentary habits, and somewhat dyspeptic. He had had one attack of herpes zoster. There was a strong family history of nervous disease. Arsenic, potassium iodide, strychnine, purgation, change of occupation and diet were tried, but without result.

Gummata of the Palm.—Dr. Paul Gallois (*Journal de Méd. de Paris*, Nov. 24, p. 478).—A man, aged 33, had a hard chancre on the frænum in 1895. Roseola and mucous patches in the mouth and throat followed. Proto-iodide of mercury was prescribed, but as stomatitis was produced, potassium iodide was ordered. In 1898 he sought advice for lumps on the hands which varied in size, from a pea to a nut, and interfered with his work. There were about 20 on each hand, principally on the palms and on the palmar surface of the



phalanx of the thumb or the third phalanx of the index finger, or oppose the thumb, and so could not work. Massage and electricity were beneficial and he resumed work 2 months afterwards. About 3 years later the writer was called to attend him for influenza, and not only had the tumours removed not recurred, but the smaller ones, which had not been touched, had almost entirely disappeared. Only 2 now remained, one on the dorsal surface of a finger, and one over the olecranon. During this interval of 3 years he had been under specific treatment. Similar cases are recorded. Von Ley (*Deutsche Med. Woch.*, Oct. 27, 1898) remarks that localisation of gummata in the hand has been rarely recorded, because it is infrequent, and, therefore, is not diagnosed.

Palmar gummata, being very resistant to treatment for a long time, iodide should be given.

fingers, but there were one or two on the dorsal surface of the fingers. There were 3 on the right forearm and one on the left. They did not appear all at once. They began as painless nodules of the size of a pin-head, adherent to the deep parts, but not to the skin. A dermatologist could make no definite diagnosis, but, thinking the lumps were probably fibromata, removed 10 of the largest in 2 sittings.

Histological examination showed they were composed of fibrous tissue. In about a month the patient returned, complaining that he could not use his right hand. He could not flex the second

Sudden Death in Infants from Hypertrophy of the Thymus.—Dr. Ducrot (*Journal de Méd. et de Chirurg. Prat.*, Oct. 26, p. 787).—Sudden death in young infants is far from rare. According to Taylor 400 children die in London every year without the cause being clearly established. In Paris there are annually 30 or 40 cases of sudden death, the cause of which is always more or less mysterious. Children put to bed in apparently perfect health have died in their sleep. The necropsy often gives only negative results. Till recently it was supposed that these children succumbed to overlaying. But there is fre-

quently hypertrophy of the thymus. Brouardel, therefore, says "it is always necessary to examine the thymus of an infant who has died suddenly, so as not to lay the suspicion of crime on an innocent person."

Cases of sudden death in children with hypertrophy of the thymus may be divided into 3 groups. (1) The child suffers for several months from attacks of sub-acute asphyxia; and an acute attack is fatal. In these cases spasm of the glottis is often diagnosed. At the necropsy nothing generally is found but hypertrophy of the thymus. (2) The child is cut off suddenly in apparent health. A healthy child, who always enjoyed perfect health, suddenly throws the head backwards, with dilated pupils and convulsed eyes, and dies without uttering a cry. It may be found dead in bed in the morning, without having attracted any notice. The necropsy shows only hypertrophy of the thymus. There are no signs of asphyxia. (3) The child, who has previously been healthy, succumbs at the end of a few hours to progressive asphyxia. Here there are signs of asphyxia besides the hypertrophy of the thymus, which appears to be the primary cause of the disaster.

In these various cases death may result from spasm of the glottis, compression of the trachea, or syncope. The diagnosis of hypertrophy of the thymus is almost impossible, and its cause is practically unknown.

Herpes in Tuberculous Subjects.—Dr. Ernest Barié (*Journal des Praticiens*, Dec. 21, p. 801).—Herpes is a rare complication of phthisis; Leudet (*Gaz. Hebdom. de Méd. et Chirurg.*, Sept., 1878, p. 617) found that it occurred 17 times in 2,000 cases. It may occur at any age but is seen only in chronic forms and generally at an advanced period. The site varies: in 17 out of 34 cases it was intercostal, in 4 lumbo-abdominal and

gluteal, in 3 brachial, in 1 frontal, in 2 on the lower limb, and in 1 on Descemet's membrane. The writer has recorded 3 cases of perineo-genital zona in phthisis on the same side as the lung disease.

Several days before the eruption appears there are pains of varying intensity. The duration of the eruption is generally about 10 days; it comes out in 24 to 48 hours as a rule, but there may be successive crops. Patches of persistent hyperæsthesia may follow its disappearance. Raymond thinks that the majority of the nervous troubles in phthisis—intercostal neuralgia, and zones of analgesia or of hyperæsthesia—are due to tuberculous meningo-myelitis, sometimes in the form of isolated patches, sometimes of diffuse nodular or infiltrating lesions, but the writer thinks the zona of phthisis is a result of peripheral neuritis.

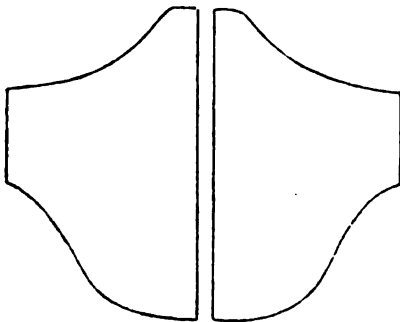
TREATMENT.—Dusting powders of talc and zinc oxide may be used and morphine given to relieve the pain.

Urticaria Immediately after a Wasp Sting.—T. Wilson Parry, M.A., M.B. (*Lancet*, Oct. 26, p. 1120).—A boy, aged 15, was stung by a wasp on the right ring finger. In a few moments his whole body became intensely pruriginous. The writer saw him soon afterwards, and found him lying in bed with a red face, swollen lips, and much swelling below the eyes. He was scratching himself with great vehemence, and on his trunk, arms, and legs was typical urticaria. He complained of sickness, and immediately vomited. Next morning the rash had entirely disappeared, and, with the exception of the finger that had been stung, he was well.

General eruptions are exceedingly rare after wasp-stings. In this case the suddenness of the onset of the rash is peculiar and points to hypodermic injection of some toxic substance.

THERAPEUTICS.

Treatment of Floating Kidney by a Lead Corset.—J. Ross Watt, M.B., C.M. (*Edinburgh Med. Jour.*, p. 553).—This method consists in supporting the whole abdomen by applying two wing-shaped pieces of sheet-lead, as used by plumbers, 5 lb. to the square foot, nearly to meet in the middle line under good long fitting corsets, so as to cover all the muscular area bounded by the various bony curves and elevations. The shape is carefully first cut, *in situ*, in brown paper so that no natural prominence is within half an inch of the edge (Fig.). A workman cuts



Showing the shape of the leads.

the leads from the shapes thus taken, which are tightly covered with "holland" or "chamois," the former preferably, as the latter stretches too easily, a border of half an inch all round being left to allow of its being stitched inside corsets. To fit these leads to the figure lay them on the abdomen over the chemise, curve them by hand pressure, apply the corset with the patient lying on her back, fasten them, and with strong safety pins attach the corners and edges to available

points of support. Carefully remove the corset and have the leads sewn exactly in position.

Apply the corset while the person lies in bed. Manipulate the floating kidney into its normal position, or as nearly so as possible, and fix on the corset. On rising, the comfort and firmness of the support is noticed by the patient. Straight-fronted corsets (No. 7, Dickens and Jones, London) are the best, as they retain the leads best in contact with the figure. Within a few minutes the pliable metal adapts itself to the changes in the abdomen as the body assumes the different positions in sitting, rising, etc., so that when the corset is removed at night, after lying down, the metal retains the contour of the abdomen. It should be gently handled, so as not to change the acquired shape. Although the lead weighs usually about 3 lb., the weight is seldom complained of, as it is spread over a large surface, and if quite clear of the bony prominences support is given to the internal viscera. This apparatus so steadies the floating organ that it ultimately fixes it in the majority of cases in 3 or 4 months. A few new leads will be required during the period of treatment, as the metal cracks at parts. The writer is convinced that this method gives results not obtained by any other.

CASE I.—A woman while hunting fell and was rolled over by her horse. The kidney became displaced and painful. She was carefully bandaged with a pad, which was kept in position by broad strips of plaster. Confinement to the sofa gave no relief. In 3 months no progress was made and she lost 23 lb. The

kidney was freely movable down to the umbilicus. A lead corset was applied. In 6 weeks she could do anything short of taking saddle and cycle exercise. In 8 months she again rode, and the kidney was found to be fixed in a nearly normal position. She has hunted without any support for 3 consecutive seasons.

CASE 2.—A single woman was thrown out of a two wheeler over a steep bank. Two months later the kidney was found very loose. The support was worn 2 months with success. Three years later the kidney was found fixed in its normal position.

CASE 3.—A married woman strained her side in reaching up. She was frequently ill, with recurring severe pain in the right side, accompanied by bilious vomiting for hours. The kidney was rolling about. The corset was worn 4 months and the attacks ceased. Two years later the kidney was found fixed.

CASE 4.—A governess was in bad health for some months, and became weak and emaciated. The right kidney was found free in the abdomen. The support was worn 2 months, after which she regained health and weight.

The writer relates 18 cases, all in women, in which this treatment was completely successful. In all but one the displacement existed upon the right side, and in all there were symptoms of "indigestion," for which many had been treated without benefit. "Headaches" and gastric troubles quickly ceased after steadying the kidney.

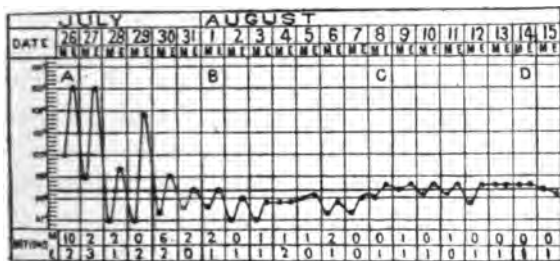
Sulphur in the Treatment of Dysentery.—G. E. Richmond, B.A., B.Sc., M.B., B.S. (*Lancet*, Nov. 23, p. 1407).—From experience of the treatment of dysentery at the Imperial Yeomanry Hospital at Deelfontein, South Africa, the writer ("REVIEW," Vol. IV., p. 493) concluded that of a multitude of remedies recommended, ipecacuanha guarded by opium and combined with warmth and rest in bed formed the best treatment. But in some cases the

patients derived little benefit and died. Thus a patient, during convalescence from typhoid fever, developed dysentery. Although given large (half drachm) doses of ipecacuanha every 4 hours on two different days, the dysentery continued, and falling into a typhoid condition with muttering delirium, constant diarrhœa, and painful tenesmus, he died on the fourth day. The use of sulphur in dysentery was suggested on the analogy of the treatment of anthrax by sulphur, as advocated by Mr. Arbuthnot Lane. Ipecacuanha was formerly employed locally in treatment of anthrax, and it seemed natural that if sulphur was more successful in anthrax it might be so in dysentery. The results justified the expectations, for in every case recovery resulted and there seemed to be little or no tendency to relapses or chronic conditions of alternating diarrhœa and constipation. To the patients it was a boon, as the obstinate vomiting caused by ipecacuanha was entirely absent, nor was it at all necessary to starve them as when taking ipecacuanha. Every patient was ordered farinaceous diet from the first. It is of the utmost importance that meat should be excluded until the diarrhœa has ceased for a week. Twenty gr. of sublimed sulphur combined with 5 gr. of Dover's powder were ordered every 4 hours. From the administration of the first powder the patient became more comfortable and the diarrhœa, distressing tenesmus, and griping pains were greatly relieved. The passage of blood and mucus as a rule ceased in 2 days. When treated with sulphate of magnesia or ipecacuanha a patient seldom admitted any amelioration under 24 hours from the commencement of the treatment. Since July 4 in the Imperial Yeomanry Hospital at Pretoria the writer has had under care 11 acute cases of dysentery and 10 cases of chronic diarrhœa following previous attacks of acute dysentery. All the acute cases were treated with sulphur and Dover's powder and the chronic cases with sulphur alone. In every instance recovery took place. The opium gives comfort,

controls the diarrhœa, keeps the ulcerated portion of the intestine at rest, and allows the antiseptic qualities of the sulphur to take effect.

CASE 1. ACUTE DYSENTERY.—A man, aged 18, was admitted on July 26th, with acute dysentery. He had been ill for 5 days with diarrhœa and for the last 2 days his bowels had acted daily 10 times, the motions consisting of blood and mucus. Tenesmus was troublesome and he complained of severe griping pains in the abdomen, especially at night. In the evening the temperature rose to 103° , there were sordes on the lips, and he was in great distress and very feverish. The bowels were opened 12 times on the day of admission. Treatment was commenced at 10 p.m. (Fig. 1). On the 27th he was in much less

FIG. 1.

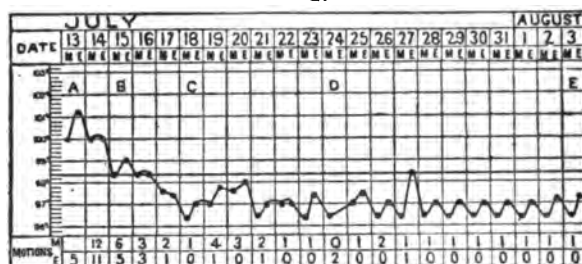


A, Admission: from 10 P.M. sulphur and Dover's powder ever 4 hours. B, Sulphur and Dover's powder thrice daily. C, 20 grains of sulphur thrice daily. D, Chicken diet, port, eggs, and custard.

pain and the tenesmus was relieved; the bowels had acted only twice in the night of the 26th and thrice in the day. The temperature again rose to 103° . On the 28th the temperature only rose to 99.2° in the evening; the bowels acted twice during the previous night and only once in the day. No blood and mucus were passed after this morning except a trace with one motion on Aug. 1. On the 29th the temperature again rose to 101.8° in the evening and there were 6 actions of the bowels in the night. After this the temperature remained normal or subnormal and recovery was uninterrupted.

CASE 2. ACUTE DYSENTERY.—A man, aged 23, was admitted on July 13. He had been ill with dysentery 3 days; he passed blood and mucus from the first, and the diarrhœa had been frequent, the bowels acting from 20 to 30 times a day up to the time of admission. He complained of considerable abdominal pain and griping and was troubled with tenesmus. On July 13 and 14 one drachm of sulphate of magnesium was given every hour day and night and plain milk

FIG. 2.



A, Admission: one drachm of sulphate of magnesia every hour: plain milk. B, Sulphur and Dover's powder every four hours; farinaceous diet. C, 20 gr. of sulphur twice daily. Sulphur and Dover's powder at night. D, 20 grains of sulphur thrice daily. E, Chicken diet, port, eggs, and custard.

diet (Fig. 2). On the 15th there were in the 24 hours 17 motions which still consisted principally of blood and mucus, and as the patient still complained bitterly of the griping pains and tenesmus, the treatment was changed to a combination of 20 gr. of sulphur and 5 gr. of Dover's powder every 4 hours. The bowels acted 5 times during the day and 3 times during the night, and considerable relief from the griping and tenesmus was experienced. On the 16th the motions were chiefly faecal, containing only traces of blood and mucus. On the 17th the bowels acted only twice in 24 hours and contained only slight traces of blood and mucus. No blood or mucus was passed after this day, and on the 19th a normal motion was passed. On the 24th 20 gr. of sulphur were ordered thrice daily, and on Aug. 3 chicken diet was given and no diarrhœa resulted.

CASE 3. CHRONIC DIARRHŒA FOLLOWING ACUTE DYSENTERY.—A man, aged 31, was admitted on June 21. He previously had two severe attacks of dysentery, the first in Feb. and the second in April, and since the first he had suffered from chronic diarrhœa. The bowels had been very irregular; there were sometimes as many as 8 or 9 motions in 24 hours and often 4 or 5, whilst at other times he was constipated for 48 hours at a time; occasionally he passed a little mucus but no blood. Several remedies, including bismuth and opium, were employed with little or no benefit. On July 12 he was given farinaceous diet, and 4 ounces of port and 20 gr. of sublimed sulphur thrice daily. On the 13th and 14th the bowels acted 4 times daily, and on the 19th 3 times. On the other days and after this the bowels were quite regular, being opened once or twice daily. On the 27th he was given chicken diet and no diarrhœa resulted. The bowels continued regular after the sulphur was omitted. Thus a patient who had suffered from dysentery and chronic diarrhœa for 5 months was cured in a few days by sulphur.

Sulphur, from its solidity and non-absorbability, is an ideal intestinal antiseptic; it passes along the whole intestinal tract for it can be seen suspended in watery motions. Under it the stools become much less offensive. Whatever is the cause of dysentery sulphur seems capable of curing it. Possibly it may be useful in summer diarrhœa and enteric fever. In one case of phthisis in which the patient was admitted with (?) tuberculous ulceration of the colon following an attack of dysentery 3 months before, sulphur was given with great benefit and all abdominal pain and hyperæsthesia disappeared.

The Esters of Quinine.—M. Overlach (*Centralbl. f. Inn. Med.*, Aug. 17, 1901, p. 815).—Of the derivatives of quinine, euquinine alone has proved satisfactory. The writer claims, however, better results with the quinine ester

of salicylic acid called "saloquinine" to distinguish it from salicylate of quinine. Its formula is $C_6H_4.OH.CO.O.C_{20}H_{21}N_2O$. It is a crystalline body, insoluble in water, but readily soluble in alcohol and ether. Its action is that of a mild salt of quinine. Though useful in malaria, the best results were obtained as an anodyne in neuralgia, and the neuroses, and as an antipyretic in typhoid fever. The dose is half a drachm once or more daily. For sciatica this is given at bed-time and again during the night if the pain returns or increases. The advantages claimed for saloquinine compared with ordinary quinine are: (1) it is tasteless; (2) it does not produce toxic symptoms (tinnitus, deafness, disturbance of vision, confusion of ideas, vertigo, etc.); (3) even during prolonged administration in large doses it does not produce digestive or urinary disturbances. Roughly as regards dose, 30 gr. of saloquinine are equivalent to 15 gr. of ordinary quinine. Saloquinine forms acid and neutral salts, the unpleasant taste of the former precludes their use, the latter are tasteless and combine the actions of quinine and acids. One of these the salicylate of saloquinine (not salicylate of quinine), called "rheumatin," the formula of which is $C_6H_4.OH.CO.O.C_{20}H_{21}N_2O.C_6H_4.OH.COOH$ has marked anti-rheumatic properties. It forms white crystalline needles, soluble with difficulty in water. Its action cannot be due simply to the salicylic acid which is present to the extent of almost 50 per cent. or to a combination of quinine with salicylic acid, since simple mixtures of these two drugs are not so efficacious. It is the most active of all preparations of salicylic acid and is superior to aspirin (acetyl salicylic acid). The following method of administration is recommended: 15 gr. should be given thrice daily for 3 days; on the fourth day the medicine should be suspended, then for 4 days 15 gr. should be given 4 times a day, with a pause every fifth day. Salicylic acid appears in the urine within 20 minutes of administration.

Suprarenal Extract as a Hæmostatic.—W. Thelwall Thomas, F.R.C.S. (*Brit. Med. Jour.*, Nov. 23, p. 1527).—In the two following cases suprarenal extract arrested hæmorrhage when all the ordinary remedies had failed.

CASE 1.—An infant, aged 13 months, fell against some heavy furniture, tearing the lip from the upper jaw to the extent of an inch. Bleeding was severe. A practitioner packed the wound. A few hours later further treatment was necessary, and for the next 3 days, at periods of 12 hours the wound had to be cleansed of clot. Most of the usual applications were used, but the bleeding recurred. On the fourth day blood was trickling out of the mouth; the lips were ashy grey, the skin was like marble, and the ears were almost transparent. A large soft clot protruded from beneath the upper lip. The gauze pack was withdrawn from the wound, and with a good electric light, the patient's head being inverted, an irregular cavity with bleeding walls was disclosed; two buried catgut sutures checked the hæmorrhage; a gauze pack powdered over with salicylic acid was introduced, and a long strip of plaster applied from cheek to cheek, crossing the philtrum of the lip to retain the pack *in situ* and maintain pressure. Next morning bleeding recurred. The cavity was cleansed and packed with gauze impregnated with powdered suprarenal extract, and 1 gr. of the extract was given every 4 hours. No further hæmorrhage occurred. The dressing was changed daily, the general condition rapidly improved, and on the third day only a slight granulating line remained.

CASE 2.—A man, aged 23, as long as he could remember had bled excessively from any slight wound; the slightest pressure or bruising was immediately followed by a large hæmatoma. Eight years before he had severe hæmaturia for 7 days, and again 2 years later. Three years before he had an extensive hæmatoma over the right hip, extending to the popliteal space, the result of twisting when jumping on an omnibus (probably rupturing a few

muscular fibres). Some lameness remained. A brother, aged 14, was also a bleeder. Six weeks before, when wood carving, a chisel slipped and cut the patient slightly over the metacarpo-phalangeal joint of the left index finger towards the palmar side. He bled profusely and went at once to a medical man, who dressed the slight wound by placing a pad of lint wrung out of perchloride of iron on it and covering it with a firm bandage. The dressing was retained for a week. Bleeding occurred every time the wound was dressed or the tight bandage was slackened.

He was admitted to hospital on Dec. 29, markedly anæmic. On exposing the wound watery blood oozed out through and around some soft clot. A tourniquet was applied to the forearm, and the wound was found to be half-an-inch in diameter and about the same in depth. The wound was filled with freshly-powdered suprarenal tablets and a piece of cyanide gauze with some extract powdered into its interstices was bandaged on. Five gr. of suprarenal extract were given every 4 hours, and he was kept in bed. Next day some soft clot was washed away and the dressing renewed. The wound was undisturbed for 4 days, when the now shallow granulating cavity was cleaned out. On Jan. 4 the dressing consisted of cyanide gauze without "extract," and on the 6th he discontinued taking it. The small granulating area took several more days to soundly heal. On Jan. 4, he pressed his hand on the back of a chair to assist himself in rising, and an extravasation of blood took place into the palmar flexor sheath. Five gr. of suprarenal extract every 4 hours were given.

The immediate action of the extract in this patient should encourage resort to it, notwithstanding any theory as to the pathology of hæmophilia. Its hæmostatic action was also shown by a case in which a tough, enlarged tonsil was excised from a man, aged 24. The bleeding being too free, the bleeding area was mopped with a piece of sponge freely powdered with suprarenal extract. The hæmorrhage immediately almost ceased.

Value of Suprarenal Extract.—Walter Henry Brown, F.R.C.S. (*Lancet*, Jan. 4, p. 21).—

CASE 1.—A man, aged 53, had suffered for 12 months from profuse sweating which followed nephritis. The sweating was so severe that latterly he had to change his clothing twice or thrice daily. He was passing only about 6 ounces of urine in the 24 hours. He had lost two stones in weight. For the whole year he had been under treatment but the sweating persisted and even increased. Suprarenal tabloids were given. In two days the sweating began to subside and at the end of 4 days had entirely ceased. On the fourth day a normal quantity of urine was passed.

CASE 2.—A man, aged 30, a "bleeder," had hæmorrhoids. The bleeding was severe, often soaking through his clothes and he was beginning to suffer from the effects of the continuous drain. From the family history the case did not seem to be suitable for operation. Suprarenal extract was given and in a week the bleeding ceased.

CASE 3.—A woman, aged 36, was much reduced by hæmorrhage from a uterine myoma. Ergot and mineral acids were useless; but within 48 hours of taking suprarenal extract the bleeding ceased.

The Therapeutical Indications from the Cardio-Vascular Conditions of Renal Disease.—Sir William Broadbent (*Practitioner*, Nov., p. 505).—The first indication is immediate and free venesection on the occurrence of uræmic convulsions. Sixteen to 20 ounces of blood should be taken at once and followed by a calomel purge. If a single venesection does not stop the convulsions the operation may be repeated, and recurrent uræmic convulsions may be treated by further venesection. In acute tubular nephritis the bleeding may be followed by immediate and remarkable improvement.

Another indication may be deduced from the fact that the damage to the vessels and heart,

through which much of the suffering of renal disease is brought about, and by which life is shortened, is due to high arterial tension. Reduction of the intra-vascular pressure ought to be an object continually in view. For this purpose the vascular relaxants—nitroglycerine, the nitrites, and tetra-nitrate of erythrol—have been tried. Unfortunately their effect is very fugitive, but the last, which is slower and more persistent in its action, may sometimes be given with advantage. The best remedy for unduly high blood pressure is a mercurial aperient. Three to 5 gr. of calomel will often avert impending convulsions, or prevent their recurrence, relieve headache, stupor, and twitchings in advanced kidney disease, and may prevent uræmic paroxysmal dyspnœa. So also a single grain of pil. hydrarg. or of hyd. c. cret., with rhubarb or colocynth and hyoscyamus, once, twice, or thrice a week, according to the degree of pulse tension, exercises a favourable influence in the early stages of chronic Bright's disease, both on the symptoms and the course of the disease.

Treatment of Whooping-Cough by Carbolic Spray.—Dr. L. Baumel (*Nouveau Montpellier Médical*, Oct. 13, p. 449).—A child, aged 7, suffering from whooping-cough, who happened to occupy a bed near a case of amputation of the thigh in which the carbolic spray was used for several days, rapidly recovered. Since this the writer has treated several cases of whooping-cough by spraying twice or thrice daily for 20 minutes. This method has only the slight inconvenience of sometimes producing a little conjunctivitis if the eyes are not protected by a bandage. The spraying should be performed at the distance of a yard or more from the patient's head. In both number and intensity the fits of coughing were reduced; in one case, in which there were about 17 attacks every night, the number in two or three days was reduced to

2 or 3. After the same lapse of time the patient was completely cured. The strength of solution used was 1 in 40, and the quantity about 8 oz. per day, for a child aged 16. The dose should vary with the age. After the treatment was commenced the duration of the trouble has been reduced to 9 days, 3 days, and even 1 day.

and the condition of the intestines. One and a half grains will usually produce a copious watery stool within 2 to 5 hours in patients who are about, but those confined to bed and taking morphine may require the larger dose. The greater part of the phenolphthalein taken can be recovered from the stools. It may be given in pills, powders, and tablets ("Purgo-tablets").

Phenolphthalein, a new Purgative.—

Z. Vámosy, (*Ungar. Med. Presse*, Aug. 10, p. 476).—Phenolphthalein has no action on animals even in large doses, but in man is an excellent purgative. It is a yellow powder insoluble in water, tasteless, and soluble in alkaline solutions, which it colours red. It is used as an indicator in titrations. It passes through the stomach unaltered, and forms a slightly diffusible sodium salt in the alkaline secretion of the small intestine. The greater part is not absorbed beyond the cells of the intestinal mucosa, the hydrostatic conditions of which it so alters as to allow copious transudation of water towards the intestine, and to prevent absorption in the opposite direction. Phenolphthalein acts, therefore, similarly to magnesium and sodium sulphate, and is a mild laxative and suitable for infants. The difference in the action on man and animals is probably due to the fact that in the latter no sodium salt is formed, although the reaction of the intestinal contents is alkaline. The dose is from 10 to 15 cgm. (about $1\frac{1}{2}$ to $2\frac{1}{2}$ grains), or according to Wenhardt from 5 cgm. (about $\frac{3}{4}$ grain) to 2 gm. (30 grains). This latitude in dose depends on the patient, the disease present,

Hypodermic Injections of Gelatine in Melæna Neonatorum.—Holt Schmidt (*Münch. Med. Woch.*, Jan. 7th, p. 13) has treated the last 5 cases of melæna neonatorum which have occurred in the obstetric wards at Dresden with hypodermic injections of gelatine. A 2 per cent. solution was prepared by dissolving 20 gm. of gelatine in a litre of normal saline solution, and placing it in a flask. After the neck was plugged with cotton wool the flask was placed in a water bath and boiled for 5 or 6 hours. Immediately before use the solution was heated to blood heat. Fifteen c.c. were injected hypodermically, usually in 2 places, to avoid undue tension. In 3 of the 5 cases the hæmorrhage ceased after the first injection, but in the fourth case 2 injections, and in the fifth 3, were required. No other treatment was employed except that the child was kept warm and as well nourished as possible.

The writer had 5 recoveries in 5 cases. The death-rate of melæna neonatorum, is usually 50 per cent.; of the previous 14 cases in the same clinic, which were not treated by gelatine, 7 were fatal.

SURGERY.

Suppurative Appendicitis with Hæmaturia.—William Thorburn, F.R.C.S. (*Medical Chronicle*, Nov., p. 116).—CASE 1.—A boy, aged 14, was taken ill on Oct. 17, 1900, with vomiting and pain in the right side of the abdomen. He was admitted to hospital on Oct. 22, with pain and tenderness in the right iliac fossa, a diffused tender swelling extending from the outer half of Poupart's ligament upwards and inwards to within one inch of the umbilicus, marked tenderness and rigidity in the right loin from the last rib to the iliac crest, and anteriorly tenderness beneath the right costal margin, which was less severe than in the rest of the right abdomen. The bowels were acting daily. The urine was bright red and contained blood. The temperature was 100°. During 3 days the condition remained unchanged except that the temperature gradually rose to 102°, and the diffused swelling in the right flank became larger, reaching upwards to the right costal margin. On Oct. 27 an incision was made in the usual position for the opening of appendicular abscess, and about an ounce of fæcal pus was evacuated. The appendix was not sought. The temperature fell to normal on the same evening. A fæcal fistula was left from which solid fæces escaped at intervals until Nov. 16. Up to the time of operation free hæmaturia continued, but thereafter there was not sufficient to be recognisable by inspection. A few red corpuscles were discoverable by the microscope up to Dec. 8, when there was a small fistula in the groin.

CASE 2.—On Sept. 28, 1901, a boy, aged 9, was seen with typical symptoms of appendicitis. His illness began on Sept. 24 with abdominal pain, tenderness in the right flank, and an evening temperature of 103°. The urine was normal. A well defined swelling developed in

the right iliac fossa; the bowels were constipated; fever continued, but the temperature gradually fell to 100°.

A well defined tender swelling occupied the outer part of the right iliac fossa, and there was marked tenderness at the back from the last rib to the crest of the ilium. The general condition appeared to be improving, and there was no evidence of increasing exudation. On the morning of the following day the pain was greater, and the swelling was somewhat larger, but the temperature was still falling. The urine, which was passed with some pain and difficulty, contained bright blood and small coagula in quantity of apparently half its total bulk. At 6 p.m. the appendicular abscess was opened; about an ounce and a half of fæcal pus was evacuated; the appendix was clearly felt on the posterior aspect of the colon, but was not disturbed. A large drainage tube was introduced. The temperature immediately fell to normal. Recovery was uninterrupted. Two hours after operation some ounces of dark brown urine without clots were passed. From this time there was absolutely no hæmaturia.

Apart from the hæmaturia both cases were perfectly typical and straightforward. But the peculiarity of the first caused the writer to hesitate somewhat as to the diagnosis, and in the second he would have had more anxiety but for the issue of the first. On the one hand such cases may be mistaken for perirenal abscesses, and on the other, it may be supposed that an appendicular abscess has opened into the urinary passages. Any explanation can be only problematical. Possibly the exudation extended high up into the right flank and compressed the renal vein. The writer has been unable to find in literature any reference to similar cases.

Bilocular Intrapelvic and Scrotal Hydrocele.—By J. Lacy Firth, M.S., F.R.C.S. (*Brit. Med. Jour.*, Nov. 16, p. 1463).—A hydrocele may have an hour-glass shape ("hydrocele *en bissac*") either because a localised inflammatory thickening of the tunica vaginalis renders one part more unyielding than the rest, or because the tunica becomes pouched at some part from local weakness. Curling pointed out that such a pouch might form in the digital fossa between the epididymis and the back of the testicle, and might push its way towards the opposite side of the scrotum. Similarly pouches may form on the front or sides of the tunica vaginalis, and the pouches may, by reason of the relative weakness of their walls, become larger than the tunica vaginalis itself. Such a pouch may bulge far into the opposite side of the scrotum and cause a single hydrocele to resemble superficially a double one. These varieties of bilocular hydrocele are contained in the scrotum. The following case is of the rarer form in which one loculus is in the scrotum, the other within the abdomen, and the channel of communication between the two lies in the inguinal canal.

A man, aged 20, came to hospital in Oct., 1899, with a swelling in the left side of the scrotum. It had existed since infancy and used to diminish when he lay down. About 10 days previously it was tapped and a bowl of fluid "like wine" was drawn off. The swelling soon returned and was tapped again in the hospital.

In March, 1900, it had increased and was painful when he attempted to work. When he lay upon his back the left side of the scrotum was of the size of a lemon. On coughing the swelling momentarily expanded and then returned to its former size. It was very translucent and felt like a rather flaccid sac of fluid. The testicle was felt in the posterior part of the swelling and was very sensitive. The epididymis was indurated and nodular. The swelling could be almost entirely reduced through the inguinal canal, but quickly returned when the pressure was relaxed. When the scrotal swelling was sud-

denly and smartly pressed upon a slight bulging of the abdominal wall in the left iliac region was produced, and on laying one hand on that region and the other on the scrotum fluctuation was perceived. A sudden tap upon any part of the abdominal wall, even in the right hypochondriac region, immediately produced expansion of the scrotal swelling. There was no visible prominence of the abdominal wall in the fluctuating area. Both flanks were resonant in all positions. An attempt was made to obtain fluctuation with a finger in the rectum and a hand placed over the iliac fossa or in the scrotum, but without success. This examination was unsatisfactory, owing to the patient's intolerance. There was a small and flaccid hydrocele of the right tunica vaginalis.

An incision was made over the external abdominal ring and inner part of the inguinal canal. After a little dissection the wall of the hydrocele sac was exposed and incised. Hydrocele fluid flowed freely away. Through the opening and through the neck of the sac the forefinger was easily passed backwards into a large cystic cavity in the iliac fossa. The neck of the sac and inguinal canal would easily have allowed two fingers to pass. The intra-abdominal part of the hydrocele sac was extraperitoneal. The scrotal portion, which contained the testicle, was separated from the spermatic cord a short distance above that organ and cut across there, and the lower part was closed by a few sutures, so as to form a tunica vaginalis for the testicle. The rest of the scrotal sac was freed from the structures of the spermatic cord which lay behind it, and from other structures up to the inguinal canal, just as a hernial sac is separated in the operation for the radical cure. Gentle traction was made upon the free portion and the remaining (intra-abdominal) portion of the sac gradually came down, was separated easily from the surrounding structures, and was removed. The inguinal canal was closed after Macewen's method. The dressing was removed 8 days after operation. The testicle

felt enlarged and soft. Some fluid had collected in the newly-formed tunica vaginalis. A week later the wound had healed by first intention except at the upper end. The hydrocele was as at the last dressing, and extending from its upper end to the external abdominal ring the spermatic cord was felt considerably thickened and indurated. Also the hydrocele on the right side was as before. In Nov. these hydroceles remained, the left being of the size of a hen's egg, and tense and irreducible, but giving no trouble.

This type of bilocular hydrocele with an intrapelvic and a scrotal sac probably depends upon faulty obliteration of the funiculo-vaginal process of the peritoneum. In the infantile form of hydrocele its obliteration has taken place near the internal abdominal ring, and the funicular process below that level, including the tunica vaginalis, has become distended with fluid. In bilocular hydrocele there is a sac of fluid in the scrotum and inguinal region like that in the infantile form, and in addition an intra-abdominal sac continuous with the other, suggesting that a higher unobliterated portion of the funiculo-vaginal process has become distended with fluid. Jacobson says that in these cases the funiculo-vaginal process has probably become obliterated high up at the internal ring, and that the rest of the process below has become distended with fluid which has ascended in the inguinal canal and formed an upper sac from the surrounding parts. Macewen admits the possibility of great distension of such a sac obliterated at the internal ring, causing intrusion towards the peritoneum, though, owing to the abdominal pressure, this would be much resisted, but he does not consider the formation of such a hydrocele outside the internal ring sufficient to explain the formation of intrapelvic and scrotal hydroceles. He suggests that these latter are due to the funiculo-vaginal portion of the peritoneum existing as a sheath lying along the anterior aspect of the pelvic portion of the cord beyond the internal ring, and becoming shut off from

the general peritoneal cavity at the deepest part of the pelvic portion of the cord, so that the process is continuous and patent from the testicle to the deepest part of the vas deferens. If such a tube became distended with fluid a bilocular hydrocele would form, with a constriction where it passed through the abdominal muscles. He further suggests, in order to explain the sudden appearance of the scrotal swelling in some of the cases, that a slight adhesion might have existed in the funicular process where it passed through the abdominal muscles, and that the pelvic cyst having formed first, a sudden strain has broken through the adhesions and allowed the fluid to pass down into the scrotum. In both the cases he reports the patients ascribed their trouble to the sudden strain of lifting a weight, and the scrotal swellings appeared shortly after the strain. On the other hand, the scrotal hydrocele might form slowly if it merely received the overflow from the pelvic sac.

In some cases of bilocular hydrocele the abdominal cyst has pressed upon the bladder and caused frequency of micturition. Whether or not the upper sac will produce a swelling of the abdomen visible on examination naturally depends upon the size and tension of the cysts and the thickness of the abdominal wall. In this case the only visible sign of the presence of an abdominal cyst was the wave-like movement of the parietes over the cyst when pressure on the scrotal swelling was suddenly made. Twenty-five cases have been recorded.

In the following case a hydrocele of the cord was of the bilocular type.

CASE 2.—A boy, aged 11, was admitted to hospital complaining of a swelling in the left groin, which had been present 7 or 8 months, and which a truss had failed to keep back. The swelling was situated over and just below the external abdominal ring, was not larger than a medium-sized plum, and was soft and ill-defined, readily and completely reducible, but easily coming down again. It was exposed by an incision over the external abdominal ring. It could be forced

down so as to be present in the wound by dipping the fingers deeply into the iliac fossa, close above Poupart's ligament. On opening the sac clear fluid escaped. The finger was easily passed through the wall of the sac into the iliac fossa, and was thought to have passed into the peritoneal cavity because the intestines in front, and the brim of the pelvis and the iliac vessels behind were distinctly felt. It had passed into an intra-abdominal sac continuous with that of the hydrocele which had been exposed externally, where it lay in front of the spermatic cord. The ready reducibility of the swelling before operation was obviously due to the fact that the fluid could be displaced from the external portion of the sac into the internal portion. Both portions of the sac were easily removed without incising the external ring or inguinal canal. Lower in the cord a second small encysted hydrocele was found and removed. The pillars of the external ring were approximated with sutures. Primary union and complete cure followed.

appearance. At first the patient was thought to be cyanosed, but the colour was not universal, did not disappear on pressure, and persisted after he improved. All over the dusky skin were minute areas (from 0.5 to 1 mm. in diameter) of normal tint with ill-defined bluish borders which united into a meshwork. This condition extended to the lips and mouth. There were large subconjunctival and minute retinal hæmorrhages. The urine contained albumin and blood. Nitroglycerine $\frac{1}{8}$ gr.; atropine $\frac{1}{60}$ gr.; and strychnine $\frac{1}{8}$ gr. were injected subcutaneously. After 4 hours consciousness was regained. On the fourth day he was comfortable but the livid colour was unchanged; on the ninth day it began to fade but it did not go through the changes of an ecchymosis; on the twelfth day it had almost disappeared. Recovery took place in about 3 weeks.

Several historical examples of this accident have been recorded: 23 persons were crushed to death by the rush of the mob at the Champs de Mars in 1837, and 9 in the panic at the Pont de la Concorde in 1866, nearly 1000 in the fire at the Vienna Ring Theatre in 1881; nearly 200 children were asphyxiated by being crushed in a corridor in the panic at the Victoria Hall, Sunderland. The latest example is the fire at the charity bazaar in Paris in 1897. Dr. Olliver who examined the bodies in the Champs de Mars catastrophe, found in all a uniform violet tint, spotted with ecchymoses of the neck and face. The peculiar colour of the skin he explains as due to stasis of carbonised blood in dilated and paralysed capillaries. In 9 there were subconjunctival extravasations, in 4 sero-sanguineous froth ran from the mouth and nose, in 4 blood flowed from the nose and in 3 from the ears, and in 7 ribs were fractured. In females the sternum was fractured. The large veins were found filled with blood and the vessels of the pia mater engorged. There were effusions of blood into the posterior part of the lungs. In the Pont de la Concorde cases Tardieu found punctate hæmorrhages in the loose

Asphyxia from Pressure on the Chest.—

H. L. Burrell, M.D., and L. Grandon, M.D. (*Boston Med. and Surg. Jour.*, Jan. 2, p. 13).—A man, aged 22, was caught between an electric car and a doorpost, his chest being compressed antero-posteriorly as in a vice for 3 minutes. When the car was moved he fell unconscious. An hour later he was admitted to hospital still unconscious. The pulse was 100 and weak; the respirations were 30 and shallow. The hands and nose were cold. Blood flowed from the ears and nostrils. The pupils were small and equal and did not react to light; there was great chemosis. The knee-jerks were absent. One or more of the left lower ribs were fractured, but there was subcutaneous emphysema of the left chest in the front which interfered with examination. The head, face, neck, and chest as low as the third rib had a dusky, bluish, mottled

tissue of the pericranium, under the visceral pleura, and on the surfaces the heart and abdominal viscera.

TREATMENT.—If the patient is seen immediately after the accident artificial respiration should be performed; later, stimulants are indicated.

Eclipse Blindness.—Simeon Snell, F.R.C.S. Edin. (*Brit. Med. Jour.*, Jan. 8, p. 130).—A man, aged 40, intently watched the eclipse of the sun on May 28, 1900. The eclipse commenced about 3 o'clock, attained its greatest magnitude about 4, and was over at 5. He looked first through a blue glass, then through a ruby glass, and also for a short time with the naked eye. The total time the eyes were exposed to the sun was about one hour, in periods of from 2 to 10 minutes. The glasses did not appear to provide sufficient protection, for every time the sun was looked at, nothing but a glare was at first visible. By steadily watching the sun the glare vanished in a few seconds, and the eclipse was plainly seen. No further inconvenience was then noticed during that observation. Vision was defective immediately after the first observation. When the eyes were closed a bluish disc about the size of the apparent disc of the sun was seen, after a few seconds it faded. This lasted for 24 hours. An hour or two later direct vision was blurred. In the evening he could not read; he saw a hazy blankness, the shape being round, the outline indistinct, and the haziness less marked towards the edges where the type was visible.

May 29. In both eyes direct vision = $\frac{9}{14}$, eccentric vision = $\frac{8}{9}$. There was slight haziness round the papillæ, and the veins were a little full. No definite scotoma was detected, but over the area of fixation vision was blurred. When he looked at a person's head he saw only the body and legs; similarly, if he looked at the chest he saw only the head and legs. Potassium

iodide and coloured protective glasses were ordered.

The central blur became fainter and gradually diminished, and on June 8 direct vision = $\frac{8}{9}$. On June 22 he said that the blur had disappeared since about the 12th, leaving a disc. On June 23 no alterations were visible in the fundi. On July 5 V. = $\frac{8}{9}$. On Nov. 7, he said he was perfectly well.

In this case the ophthalmoscopic signs were practically *nil*; in some of the recorded cases fine changes have been observed at the macula; in others indefinite changes similar to those of the present case have been observed; in others no abnormal appearances have been mentioned. The prognosis appears to be favourable, vision, for practical purposes, being restored, but in many cases a scotoma, more or less distinct is permanent. The cases illustrate the uselessness of the "glasses" too frequently used in observing eclipses. The writer has observed 2 other cases, in which only one eye was affected. A youth, aged 17, who was looking through a powerful telescope received the full blaze of the sun directly in the right eye. He felt as if the sight was "gone." Seven weeks later he had still a "black dot" before his eye, about the size of a pin's head. V.—1.5D. = $\frac{8}{9}$. In gazing at a line the portion looked at appeared to be thicker (*metamorphopsia*). This phenomenon has been observed in a few of the recorded cases. The second case occurred in a girl who suffered from retinitis in consequence of receiving the sun on a hot summer day full on her eye from a reflector which a boy was using. The eye recovered perfectly.

Ranula Protruding in the Neck.—Jonathan Hutchinson, F.R.S. (*Polyclinic*, Dec., p. 308).—A woman, aged 70, had a tumour as large as a cricket ball projecting under the right side of the lower jaw. She said that it had been present for 10 years or more, and had latterly much increased. It was very soft when the jaw

was at rest and freely fluctuated, but it became tense in the effort to swallow. She denied that there was anything in the mouth, but examination disclosed a ranula under the tongue, and there was free communication between it and the tumour in the neck. The one could be made tense by pressure on the other.

Ranulæ occasionally make their way downwards into the neck. They probably pass backwards round the posterior edge of the mylo-hyoid in the reverse direction of Wharton's duct. Having once escaped from "the diaphragm of the mouth" made by the expansion of the mylo-hyoids, there is nothing to prevent free enlargement under cover of the weak platysma. When once a cyst has made its escape from the mouth in this way all further enlargement takes place in the neck, and the patient ceases to be incommoded by bulging under the tongue. Hence the explanation of the patient's ignorance that she had anything in her mouth. As she was old and the swelling caused no inconvenience and as she had borne with it for 10 years or more, it is doubtful whether an operation is advisable. If such were undertaken the best plan would be to lay bare the tumour in the neck as freely as possible without puncturing it, and then to remove as much of it as possible. By an incision through the mylo-hyoid it might be practicable to remove the whole cyst, but it would be a tedious dissection, and probably end in disappointment, since if once the cyst were pricked and collapsed it would be difficult to follow. The result might be either a fistula in the neck or, if healing were complete, a reaccumulation in the mouth.

of the first week the right upper eyelid became swollen, and there was a thin discharge from the conjunctiva. A pimple became pustular, broke down, and formed an ulcer which rapidly spread, destroying both lids. The edges of the ulcer were sharply defined and somewhat undermined, with a narrow zone of dusky congested skin. The cavity was partly occupied by dark greenish pus and dirty soft slough. On removing some of this the eyeball, with its opaque cornea, could be seen. Later the slough all cleared away, and a mass, probably the lacrymal gland, projected from the outer and upper corner of the orbit. The cornea was



ulcerated in the centre. Finally perforation and prolapse of the iris occurred. The removal of the eye was contemplated, but the child gradually grew weaker, became more emaciated, without evidence of any other disease, and died about the middle of Dec. The cavity left by the gangrene had contracted somewhat, and cicatrization had taken place all round its margins.

Gangrene of the Eyelids in an Infant.—

F. W. Marlow, M.D. (*Ophthalmic Record*, Dec., p. 626).—A child, aged 3 weeks, was seen at the end of Sept., 1900. During the first two weeks of life it was considerably emaciated—the result of indigestion. About the end

Injuries of the Cervical Portion of the Thoracic Duct.—F. Schopf (*Wien. Klin. Woch.*, Nov. 28, 1901, p. 1169).—During the dissection of carcinomatous glands in the left supraclavicular fossa, which were secondary to

an adeno-carcinoma of the breast, the internal jugular vein was wounded and ligatured. The skin incision healed by first intention, but at the first dressing on the fifth day the supraclavicular fossa was prominent and fluctuated. On removing a suture about 7 oz. of white chylous fluid escaped. Plugging the wound and attempts to ligature the duct failed to arrest the flow, and there were progressive emaciation and asthenia. At the left base dulness appeared and extended to the spine of the scapula. There were sensations of anxiety, and of abdominal and thoracic distension, and death occurred 3 weeks after the injury. There were left fibrinous pleurisy, pericarditis, external and bilateral chylothorax. The circumference of the thoracic duct was 6.5 mm. instead of the normal 2.4 to 3.6 mm.

In most cases of injury to the cervical portion of the thoracic duct the prognosis is favourable. This probably depends on the fact that the anatomical relations of the thoracic duct are very variable. In many cases the duct enters the vein, not as a single trunk, but by a number of apertures, so that if some are divided a certain amount of chyle still enters the circulation. In other cases there are communications between the duct and the right subclavian, jugular, or innominate veins, and between the azygos and intercostal veins. If there is no delta-like ending and venous communications are absent, division is an extremely serious accident. Ligature or plugging may produce dangerous symptoms of congestion. In the writer's case cyanosis and vertigo were present before the wound was dressed, but disappeared on the escape of chyle; later there were dyspnoea and anxiety due to the bilateral chylothorax. Continued escape of chyle may prove fatal from inanition. The diet should be rich in fat and albumin, with a view to increase the amount of chyle and so to open up any possible collateral channels. That no chyle was seen to escape during the operation was probably due to the fact that the patient was fasting. The

case emphasises the danger to the thin walled thoracic duct of dissecting operations in the left supraclavicular fossa.

See also "REVIEW," Vol. I., pp. 61 and 217, and Vol. II., pp. 51 and 369.

Cancer of the Larynx of Long Duration.

—Dr. E. Kraus (*Rev. Hebdom de Laryngol., d'Otol., et de Rhinol.*, Oct. 26, p. 487).—Schwartz, in his work on tumours of the larynx, publishes a statistical table of 108 cases of cancer of the larynx in which the only operation performed had been tracheotomy. Survival after the operation did not exceed 2 years in the great majority of cases; it reached 3 years in only 2, and 4 years in 2 more. In the following case death occurred $5\frac{1}{4}$ years after the operation and the course was abnormal in several respects.

Symptoms began early in 1891 with hoarseness which gradually increased. In Sept., 1892, there was complete aphonia. An attack of dyspnoea rendered tracheotomy necessary. The writer first saw the patient 15 days after the operation.

Laryngoscopic examination, only possible with the aid of cocaine, revealed a large greyish-red tumour of the left ventricular band, completely occluding the glottis. On Sept. 29, 1892, a great part was removed. As laryngoscopic examination was difficult, the operation was performed in the following way:—Cocaine was applied to the base of the tongue, palate, pharynx, and larynx. The left index finger was introduced as far as the tumour. Gougenheim's cutting forceps were passed under and along the finger and the tumour was removed. Histological examination showed that it was an epithelioma. Considering the advanced age of the patient (78) radical extirpation was not entertained. Fowler's solution was given to check the excessive growth of granulations round the tracheal wound, which made the introduction of the

canula more and more difficult. On Oct. 31, 1892, there was severe tracheal hæmorrhage, and a month after the operation the tumour was as large as ever. Laryngoscopic examination had become impossible; the tumour completely occluded the larynx. The general condition, however, improved day by day.

On three occasions, in 1893 and 1894, offensive and suppurating portions of the tumour were expectorated. After their discharge the aspect of the glottis (always examined from below) changed considerably; the tumour appeared to become smaller daily, and the patient was ultimately able to breathe through the larynx. Though for 2 years he had been voiceless he began to speak.

In 1898 laryngoscopic examination showed that suppuration had ceased, that the glottis was free, the right cord mobile and intact, and the cord replaced by a kind of fusiform thickening. In March, 1898, he contracted broncho-pneumonia and died, 5½ years after tracheotomy.



FIG. 1.

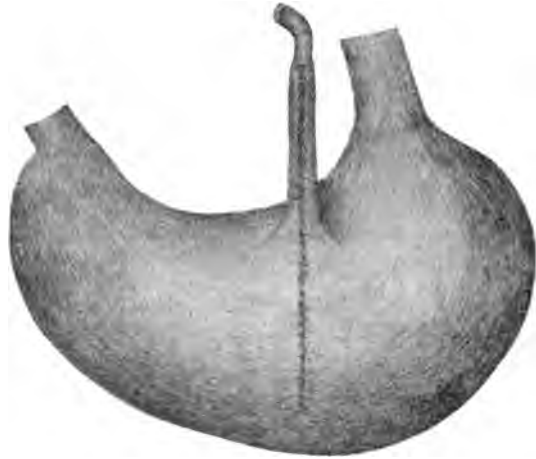


FIG. 2.

A New Method of performing Gastrostomy.—A. Depage (*Journal de Chirurgie*, Nov., Dec., p. 715).—Having found that the gastric juice escaped after all the usual methods of gastrostomy, the writer devised the following operation which he successfully performed in a case of cancer of the upper part of the œsophagus when solid food could not be taken:—A vertical incision, 7 or 8 cm. long is made a little to the left of the middle line and at the seat of election. After opening the abdominal cavity a portion of the stomach is drawn out and separated from the peritoneal cavity by a continuous suture which unites the wall of the organ to the edge of the peritoneum. A flap with its base upwards is then cut out of the anterior wall of the stomach (Fig. 1). This can be easily done by pinching up a piece of the wall between pressure-forceps and cutting along the blades. The flap is then turned upwards and the incision in the stomach

is closed by a continuous suture, carried first only through the mucous coat. The serous layer is sutured in the same way. Each of the sutures is continued on to the flap, which is in this way transformed into a canal (Fig. 2). The canal thus made is fixed to the abdominal wall, or if long enough it may be drawn through a parietal tunnel to near the xiphoid cartilage. The abdominal incision is then sutured and a sound is introduced into the canal, which may be left there or inserted before each meal. With practice a surgeon should be able to perform this operation in a quarter of an hour.

Gonorrhœal Pelvic Peritonitis in the Male.—Battez (*Thèse de Lyon, 1901, and Journal de Médecine et de Chirurgie Pratiques*, Dec. 10, p. 902).—The male pelvic peritoneum may be affected in tubercle, cancer, and, especially, in gonorrhœa. The writer has collected about 30 cases of the last condition. Evidently it is very rare. It is usually secondary to gonorrhœal infection of the bladder, prostate, epididymis, vas deferens, or seminal vesicles. These latter being the most usually affected constitute the chief source from which infection spreads to the peritoneum. When the vas deferens and vesicles are affected there is a greater danger of peritonitis. In one case the peritonitis preceded the epididymitis. In some rare cases peritonitis follows urethritis without involvement of the organs just mentioned. The course of infection is not clearly known, but arguing by analogy the gonococcus probably spreads from one tissue to another until the peritoneum is reached. The gonococcus cannot be always demonstrated in the peritoneum notwithstanding its presence in other situations. The peritonitis may be acute or sub-acute. The prognosis appears to be favourable, but in some it has a fatal termination.

The symptoms are very marked. There are acute pain in the groins, perineum and iliac fossæ, intense vomiting, high fever, constipation, diarrhœa, and the characteristic pulse, collapse, and facial appearance of peritonitis. Notwithstanding the intensity of the symptoms the duration of the disease is short. It has been suggested that the very acuteness of the inflammation destroys the gonococcus. The peritonitis seldom becomes general; the writer quotes only 4 such cases. Acute cases are less common than sub-acute. In the latter there are few general symptoms and diagnosis may be extremely difficult. Rectal examination may be the only means of ascertaining the existence of pelvic peritonitis. Probably the vagueness of the symptoms causes many cases to escape detection and

gonorrhœal pelvic peritonitis may be much more frequent than is supposed. Careful inquiry for a history of urethritis and epididymitis ought to prevent error. There is a danger of mistaking this condition for appendicitis, intestinal obstruction, or peritonitis from other cause, such as perforation. In such instances rectal examination may be of considerable aid, as by it inflammation of the vesicles may be detected.

A Bag pervious to Air in Ether Anæsthesia.—W. McGregor Young, M.A., M.D. (*Brit. Med. Jour.*, Nov. 16, p. 1465).—No better apparatus than Clover's for administering ether can be wished for, save in one particular, namely, the rubber bag. It is wrongly supposed that an asphyxial element is necessary, in ether anæsthesia, and therefore that air must be excluded. Hence the rubber bag. The objections to it are, first, that it is apt to produce more asphyxia than is desirable—namely, cyanosis; and, second, that it is unclean. Even in the best of hands it occasionally produces cyanosis to a degree that must be a strain on the right ventricle. If this cyanosis and its consequent troubles could be abrogated, nearly all the objections to ether anæsthesia would be removed. This can be done by using instead of the rubber bag, one made of linen, or other pervious fabric.

The writer has met the objection of uncleanness by rinsing the bag well with water after each operation, some antiseptic occasionally being added. To avoid cyanosis he has dispensed with the bag when he could, allowing the patient to breathe through the open inhaler, resorting only to the bag when this proved insufficient. Thus the objections were weakened but not removed. In America, where ether is the anæsthetic mostly used, a towel folded cone-shaped, and

covered or not by a thin waterproof is employed, and apparently acts well. This method, however, seems to lack precision. The writer now substitutes a linen bag for the rubber one, which completely meets the objections and answers admirably.

The bag is made of a fine linen known as "holland" and is shaped like the ordinary rubber one; the body is made of 3 pieces accurately sewn together; and there is a collar of the same material with a tape attached to be slipped over the ordinary Clover bag-mount and tied there. This bag does not fill and empty like the rubber one. It is put on in a "bunched-out" condition and only a slight rise and fall shows the expiration and inspiration. The patient goes under very quietly. There is not the usual noisy breathing, hardly any salivation, and no lividity; abdominal heaving is less marked, the anæsthesia is as quiet as with chloroform. The time required to produce anæsthesia is of course longer than with the rubber bag, varying from 7 to 12 minutes. The corneal reflex seems to be lost unusually soon. The amount of ether consumed is considerably more. During the first 15 minutes about twice as much is used. But in a prolonged anæsthesia the disproportion is not so great. There is another great advantage in the use of the linen bag: should the patient prove difficult to anæsthetise or threaten to come round, a little chloroform can be sprinkled on the bag, by preference where it shows the most marked rise and fall. A freshly washed and starched bag is used for each case; it can be slipped on the ordinary Clover mount and tied in position in half-a-minute. The writer turns the apparatus on to full gradually, but compared with the old method rapidly, and keeps it there or thereabout till anæsthesia is produced; later a less concentrated vapour will be sufficient. He thinks that the pervious ought to supersede the rubber bag. A clean antiseptic bag for each patient is to be desired, when it can be obtained at the cost of washing.

The following is a table of some of the cases in which the method has been employed:

Operation.	Amount of Ether.	Time of Administration.	Average Time per Ounce.
Choledochotomy, etc.	11 oz.	1 hr. 40 min.	1 oz. in 9 min.
Nephrotomy	5 oz.	45 min.	1 oz. in 9 min.
Appendectomy	4 oz.	40 min.	1 oz. in 10 min.
Ovariectomy	4 oz.	48 min.	1 oz. in 7 min.
Gastro-enterostomy	4 oz.	40 min.	1 oz. in 10 min.
Exploratory and colotomy	4 oz.	35 min.	1 oz. in 8 min.
Breast amputation	4 oz.	45 min.	1 oz. in 11 min.

Myeloid Sarcoma of the Tibia: Recovery after Enucleation.—Victor Schmieden (*Deutsche Med. Woch.*, Jan. 2, p. 6).—The term "sarcoma" includes a number of growths which have nothing in common except their connective tissue origin. There is every gradation between the probably inevitably fatal melanotic sarcoma, and the almost benign sarcoma of long bones. Central sarcomata of bone are usually less malignant than periosteal ones. This applies especially to central giant-celled or myeloid sarcomata, in which amputation is usually unnecessary, and excellent results are often obtained by local excision ("REVIEW," Vol. I., p. 105). Giant cells may occur in any sarcoma which arises from the medulla, or in which there is destruction of osseous tissue. The fact of their presence does not, therefore, stamp a growth as myeloid sarcoma; in this the giant cells must be arranged at fairly regular intervals and be distributed more or less uniformly. The matrix may consist of round or spindle-cells. If a tumour bleeds readily, this is a proof of erosion of vessels, and consequently of malignancy. Pure myeloid sarcomata are not very vascular. In appearance they often resemble hepatic tissue

They are most commonly seen on the alveolar process of the jaw (epulis), and near the epiphyseal lines of the long bones. The more typical the growths are in situation and appearance, the more do they follow a typical clinical course. They grow very slowly and may produce no symptoms, except occasional rheumatoid pain until they have converted the cortical layer into a capsule as thin as tissue paper, or until a "spontaneous" fracture occurs.

A girl, aged 17, of robust appearance, was accidentally kicked on the left internal malleolus on Jan 21. A surgeon diagnosed a fracture, and kept the joint in splints and plaster-of-Paris for 9 weeks. After these were removed walking was painful, and the ankle steadily enlarged. On Aug. 29 the lower fourth of the tibia was bottle-shaped, uniformly hard and tender. There was no "parchment crepitation." The movements of the ankle joint were but slightly limited, but walking and standing were painful. The fibula was not involved. A radiograph showed not only that the swelling was due to a central tumour and not to redundant callus, but also, owing to the sharp outline between the growth and osseous tissue, that it was probably benign. A longitudinal incision was made over the swelling, and after chiselling away the bone a uniformly brown and liver-like tumour, which proved to be a typical giant-celled sarcoma, was exposed. It was easily shelled out. The bony walls were then removed with a chisel, and the skin united so as almost completely to cover in the cavity, which was of the size of a fist. The cavity slowly filled with granulations, and the patient was discharged in Jan. with the leg in plaster. A second radiograph showed that the shape of the bone was much more normal, and that it had decreased greatly in circumference. Eventually the function of the foot and ankle-joint was perfect, and there was a prospect of the tibia becoming practically normal. Before operating in these cases consent to amputation should be obtained. If there is any doubt as to the degree of malignancy amputation may be post-

poned until after the microscopic examination. If malignancy is thus assured amputation should be immediate, since malignant tumours, once incised but not removed, spread rapidly and become disseminated through the opened vessels. In this case there was a definite history of injury 6 months before the operation, but from what is known of the rate of growth of these tumours this time is much too short for the kick to have been the cause. Most probably, as so often happens, the injury drew the patient's attention to the abnormality.

The writer protests against malignant tumours being so often attributed to injuries even by medical writers. Thus Löwenthal has collected 800 cases of malignant tumours and found a history of injury in 13·4 per cent. Even supposing these were above criticism, the negative history in 86·6 per cent. ought to have greater weight than the positive history in 13·4. But in many of his cases the history is of some trivial injury, such as few men escape, and which occurred years before the appearance of the tumour. The above criticism only applies to cases in which tumours are supposed to follow a single injury, such as a blow. There is no doubt that "chronic injury," in the form of long continued irritation, is often followed, especially in the skin and mucous membranes, by carcinoma.

Tuberculous Arthritis Simulating Rheumatism.—Dr. Antonin Poncet (*Gaz. Hebdom., de Med. et de Chirurg.*, Oct. 27, p. 1021).—A cabman, aged 49, was admitted to hospital in July, 1900, with joint symptoms suggesting acute rheumatism. Salicylate treatment was not successful. When he left the hospital a month later the right knee and foot were still a little swollen. For a year he remained quite well, but on June 26, 1901, he was suddenly attacked with articular pain, as in the previous July. He was re-admitted. Acute articular rheumatism localised in the right knee and ankle was diagnosed.

Salicylate of sodium and antipyrin were useless, and he was sent to the writer's surgical ward, where the provisional diagnosis of infectious rheumatism of undetermined cause was made.

The knee was put up in plaster and iodide was given, but the local condition became aggravated and the diagnosis of tubercular osteo-arthritis seemed most probable. This was confirmed by infecting a guinea-pig with some of the slightly turbid serous fluid from the joint. The animal became tuberculous. The serum-reaction also was positive. The general condition became worse, he coughed, lost appetite and weight, and had copious nocturnal sweating; auscultation revealed fine râles and crepitations at both apices, especially at the left. In Oct. the knee was swollen and globular. The skin was smooth and white, the redness having disappeared. Movement was less painful than at first; pain was localised to the interarticular line and to the head of the tibia. There was clearly tubercular osteo-arthritis.

This case shows that tuberculous arthritis, like gonorrhœal arthritis, may simulate acute rheumatism.

below the breast were some erythematous patches. The skin over the breast was as hard as wood, especially in the centre, and yet it was not altogether adherent to the gland. Palpation revealed a solid mass, movable over the chest wall. There were no enlarged glands in the axilla. The general health was excellent. The diagnosis was carcinomatous mastitis and dermatitis. Operation was arranged for July 22. Next day, however, the writer was surprised to discover immediately beyond the breast in the axillary line an œdematous condition and loss of mobility of the tumour. On the 22nd this want of mobility was still more marked. There was a distinct mass of glands in the axilla, and 8 large lymphatics could easily be traced from the breast to the axilla.

The interest of the case lies in the extraordinary rapidity of growth of the tumour. It had been present not more than 5 months, and in 3 days, almost under the eyes of the surgeon, it grew rapidly. An unusual feature was the development of cancer in a gland in a state of activity. The reflex congestion from the suckling of the other breast doubtless contributed to the rapidity of growth.

Acute Cancer of the Breast.—Dr. René Le Fort (*L'Echo Med. du Nord*, Aug. 25, p. 396).—A woman, aged 40, had 12 children, of whom the last was born on Dec. 25. Towards the end of Feb. she was seized with burning pains in the right breast and the secretion of milk on that side stopped. Soon she noticed a hard nodule in it. She suckled with the left breast until July.

On July 19 the right breast formed a large tumour. The skin was glossy, red and violet, and extremely wrinkled. The epidermis seemed raised by small confluent vesicles, hard to the touch. This condition extended over half the surface of the breast, and was most marked near the nipple which was fixed and indurated, but not retracted. On the abdominal wall

Pyle-Phlebitis from Appendicitis.—W. Moore, M.D., M.S. (*Intercolonial Med. Jour. of Australasia*, August 20, p. 349).—Pyle-phlebitis is a rare consequence of appendicitis; 3 cases have come under the writer's observation in the Melbourne Hospital which tend to show that it is not so rare as is generally supposed. In Case 1 not until after the origin of the disease had been revealed by necropsy was a history pointing to attacks of appendicitis obtained. They were most trivial—attacks of pain and vomiting, which disabled the patient merely for a few hours. In Case 3 there appears to have been no history of attacks of appendicitis, but the fatal illness commenced with severe pain and vomiting. In Case 2 the patient had had one rather severe attack of appendicitis 15 months prior to the fatal

illness, which commenced like appendicitis, but the symptoms quickly ran into those of pyæmia. Until quite recently there was little reference to this condition in the text-books, and even in the most recent the account of the disease is by no means satisfactory.

CASE I.—A man, aged 29, was admitted on Feb. 11, 1896. The illness began suddenly 12 days before with epigastric pain and vomiting. The pain increased steadily, but the vomiting ceased after 3 days. During the first 3 days there was frequent epistaxis. Since the onset of illness two rigors, lasting about 20 minutes and followed by profuse sweating, had occurred daily. He complained of pain in the upper abdomen, anorexia, great thirst, and sleeplessness. He was constipated, and had lost a good deal of flesh since the illness began. Five weeks before the onset he had an attack of epigastric pain with vomiting. It was so severe as to double him up and he sweated freely, but he quite recovered. Before this he had severe "bilious attacks" with vomiting.

He was sparely-built and very thin, with sallow complexion and pinched and anxious face. There was a crop of herpes on the lower lip which had been present 4 days. The temperature was 101.6° ; the pulse was 100, full and bounding; the respirations were 20; the tongue was moist and thickly coated with brownish fur. The abdomen was slightly full, but not distended; there was intense tenderness in the epigastrium, especially about the centre, and along the right costal margin. On the night of admission there was a rigor and the temperature rose to 105° ; the following morning he again had a rigor. On the following day there were 3 rigors, the temperature rising to 104° . It was thought that there was some suppuration in the liver.

Exploration was made by a 4-inch incision through the right rectus muscle. A little blood-stained fluid escaped on opening the peritoneal cavity. The liver was examined, but only some thick lymph on the under surface of the left lobe, was found. The great

omentum just below the stomach, close to the pyloric end, was rolled up in a hard mass about the size of two thumbs. This mass lay directly against the stomach, there being no intervening normal omentum; there was no lymph over this and the omentum below was perfectly healthy. The hand was passed down to the region of the appendix, but neither that structure nor any adhesions nor tumour could be detected. A small exploring needle was inserted into the hard mass of omentum, and foul greenish-black pus was drawn off. Iodoform gauze was packed around to prevent infection of the peritoneum and the abscess was laid open. Several small communicating pockets of pus lined by sloughing tissue were found. The omental veins in the abscess walls were thrombosed, and there were several swollen lymphatic glands in the vicinity. Sloughing tissue was cut away with scissors, and only one vessel required ligature, because of the extensive plugging. The pockets were scraped out with a Volkmann's spoon, and the whole surface touched with pure carbolic acid. The abscess cavity was plugged with iodoform gauze, which was brought out through the lower part of the abdominal wound. The remainder of the wound was closed with four deep silver-wire sutures and superficial horsehair sutures. Dry dressings of perchloride of mercury gauze were applied.

During the night he was delirious. Next morning he had a rigor, the temperature rising to 103° . There was a little blood-stained discharge which had dried on the gauze. He died 19 days later. Ten rigors succeeded one another at varying intervals. The temperature showed marked elevations and remissions, ranging between 99° and 103° . He was always delirious at night and very restless. Vomiting took place twice or thrice. The bowels acted frequently—9 times during one period of 24 hours. The stools were pale, and semi-solid or fluid. The urine was high-coloured. The face retained the earthy colour present on admission. Pain was complained of only about the operation

wound, where there was tenderness. The abdomen was always soft and sunken. He became lethargic and died 3 weeks after operation.

NECROPSY.—There was chronic inflammation of the appendix cæci, which was adherent, especially at its tip to the posterior surface of the mesentery opposite McBurney's point. The tip was converted into a chronic abscess, about half an inch in diameter, which had not ruptured. The adhesions were confined to the immediate neighbourhood of the appendix. From the abscess septic thrombosis had spread up the superior mesenteric vein and into the portal vein which was plugged with partly decolourised adherent clot. This clot extended into the main divisions of the vein within the liver. Sections of the liver presented groups of small abscesses, arranged partly irregularly, partly in branching pattern.

CASE 2.—A man, aged 22, was admitted on Jan. 14, 1897. His illness began 14 days before with severe pain in the right iliac region. Vomiting occurred. He had a similar illness 15 months before.

The temperature was 101° , the tongue was dry, and there was herpes on the lips. Slight resistance was felt in the right iliac fossa, but no tumour could be detected. McBurney's point was tender. On the day of admission there were 2 rigors, during which the temperature reached 101.6° and 105.8° respectively. Next day there was a slight rigor, the temperature reaching 103° , then falling to 98.4° .

The abdomen was opened over the appendix, which was found walled in by adhesions, especially to the omentum; about it was a small abscess containing foul pus. The adherent omentum and the appendix were separated and removed. The wound was closed with deep silver and superficial horsehair sutures; a piece of iodoform gauze was placed as a drain. For several days after the operation he seemed to be better; the rigors were less severe and less frequent, and the temperature was lower. But

after 5 or 6 days the rigors became more frequent and the temperature higher. On the 22nd, it reached 105.8° after a rigor, and he sweated a good deal. But, during this time, nourishment was well taken. He rapidly became worse, and died on Jan. 26.

NECROPSY.—There was thrombosis of the portal vein and its branches, the clot not completely occluding the vein. The liver was friable, and pus was beginning to form in places.

CASE 3.—A man, aged 29, was admitted on July 10, 1901, complaining of pains in the back and stomach, which began a week before and were severe, "doubling him up." After 24 hours they became somewhat easier and were referred chiefly to the epigastrium. He sweated and shivered during the pains. There was vomiting. The urine was high-coloured on the first day of illness, and 4 days before admission he was jaundiced.

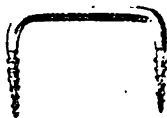
He was deeply jaundiced. The pain was chiefly in the epigastrium and right hypochondrium. A rigor occurred and the temperature rose to 103° . He had repeated rigors, frequently 2 in 24 hours, the temperature rising at times to 105° . On July 22 the abdomen was distended and tympanitic; the liver dulness was not increased, but the left lobe could be palpated and felt hard. The hepatic and epigastric regions were tender. The skin was deeply jaundiced. In the next 2 days there were 5 rigors. On opening the peritoneum much dark straw-coloured fluid escaped; the liver was enlarged and congested, but no areas of softening could be detected. The appendix could not be made out, but what was supposed to be a thrombosed vein was felt running upwards from the region of the organ. An iodoform gauze drain was inserted below the liver, and the abdomen was closed. For 2 days there were no rigors; then they became frequent and the patient delirious. He died on Aug. 8.

NECROPSY.—The appendix lay in the pelvis and was adherent to the rectum. There were abscesses around it, septic thrombosis of mesen-

teric and portal veins, multiple abscesses in the liver, and acute peritonitis.

See also "REVIEW," Vol. II., p. 19.

A Clasp for Suturing Bone.—A. Jacoel (*Presse Méd.*, Dec., p. 347).—The inconvenience of suturing bone with wire has suggested to the writer a rigid metal clasp for keeping the fragments in exact and immovable contact. The clasp, which is made in one piece, consists of a horizontal side, with two legs at right angles to it (Fig.). The latter, which are inserted into the



bone, and have serrate teeth directed upwards, so that the clasp may be inserted easily but extracted with difficulty. The writer claims for the clasp great advantages over the ordinary wire suture. It is readily fixed by a blow or two of the hammer while the bones to be sutured are held in close apposition. It may be used in any situation in which wire sutures are employed for union of bone, *e.g.*, for the obliteration of false joints and the union of the symphysis after symphysiotomy. Its use renders the prognosis of fractures more favourable.

Pneumonia, with Suppurative Synovitis of the Right Knee.—J. C. Verco, F.R.C.S. (*Australasian Med. Gaz.*, Oct. 21, p. 413).—A young woman had pneumonia of the left lower lobe. On the night of the fourth day she was kept awake by severe pain in the right knee, which came on quite suddenly. Next morning the joint was very swollen and painful,

but not red. On the seventh day, it was punctured, and pus was withdrawn. On the ninth day the knee-joint was incised on each side of the patella, and drainage tubes inserted. On the fourteenth day an abscess was opened over the right internal malleolus, and on the nineteenth a large abscess was incised and drained on the inner side of the right calf. In a month these had scabbed over. After a short time the incisions into the knee joint healed, leaving the knee slightly flexed, with some passive movement, but this gradually disappeared, leaving a stiff joint. The temperature did not range very high after the first few days. The day after the knee became affected it was 101.6° , between which and 101° it then ranged until the day after the knee was opened. There was no crisis. An aspirator needle was introduced into the chest, so as to make certain of the absence of an empyema. The pus from the knee joint yielded a pure culture of the pneumococcus.

See also "REVIEW," Vol. IV., p. 25.

Ether in the Removal of Wax from the Ears.—By E. L. Meierhof, M.D. (*New York Med. Jour.*, Aug. 24, p. 351).—To facilitate the removal of wax various substances—alcohol, glycerine, salts of sodium, and peroxide of hydrogen—have been employed to soften or partly dissolve it. Having tried all these the writer finds none so good as undiluted sulphuric ether poured from a small bottle or a suitable pipette into the external auditory meatus. In a few seconds the ether partly dissolves the cerumen, so that, with the most gentle syringing, the plug is promptly removed. The writer has not seen dizziness or other ill effects from the use of ether. For those who may hesitate to employ pure ether in the ear, a mixture of equal parts of ether and alcohol may be used, with perhaps the same effect.



ENORMOUS HYPERTROPHY OF THE BREASTS AT PUBERTY.

OBSTETRICS AND GYNÆCOLOGY.

Enormous Mammary Hypertrophy at Puberty.—Daniel Garcia, Director of the Military Hospital of Tepic (Pamphlet, San Luis Potosi, 1900).—This extraordinary case occurred in the writer's practice near Tepic, Mexico. The patient was a single girl, aged 16, a Creole, in poor circumstances. She was well-formed, her height being 1 metre 58 cm., and the only abnormality she showed was enormous mammary hypertrophy. At 13 she menstruated for the first time. Precisely when menstruation appeared she ate a quantity of myrtle berries, a fruit of the country which contains much tartaric acid. Menstruation suddenly stopped and it never reappeared. She soon noticed that the breasts began to enlarge, but there was no pain or discomfort. They continued to increase so rapidly that at the end of a year she had great difficulty in dressing herself. The right reached to the waist, the left still lower. In the second year the left breast extended much lower and more outwards than the right, was harder, heavier, and at times the patient experienced a sensation as if it were being compressed. There was considerable difficulty in supporting the enormously hypertrophied organs for more than some hours at a time, and the patient was obliged to have recourse to an ingenious method of suspending them by broad bands passed over the shoulders and neck. But soon a sensation of great fatigue obliged her to relinquish her efforts and to assume a sitting or supine posture. The enormous weight constantly pulling on the vertebral column caused marked lordosis. In the third year she could not use supports of any kind and was obliged to relinquish all domestic work. The left breast reached to the knee, the right not quite so far.

In the middle of June the writer was called in on account of a severe attack of malaria, for, notwithstanding the repeated suggestions of friends, she would not seek advice for the mammary trouble. She lived an almost solitary existence and as much as possible kept away from her relatives. The writer took advantage of the opportunity to measure and weigh, as accurately as possible, the breasts. The following are the results:—

Maximum circumference of right breast ..	80 cm.
Circumference of pedicle	58 cm.
Maximum circumference of left breast ..	108 cm.
Circumference of left pedicle	60 cm.
Weight of right breast ..	12 kilogrammes
Weight of the left	28 kilogrammes

The breasts were quite rounded and had extremely long and well-marked pedicles. So long were the latter that when the patient was standing upright the left breast touched the knee, the right a point 10 cm. above the upper border of the patella. The general appearance of the skin was normal; the areola was reduced to an almost imperceptible point and there was not a vestige of a nipple. On the right side was an extensive and deeply ulcerated scar, the result of a burn. While leaning forward to pick up some object the patient was unable to support the enormous weight of the breasts which so dragged her down that she fell on the fire. Rounded somewhat elastic masses were felt in the breasts. In the main part of the breasts they were harder and more resistant and somewhat more diffuse, but in the pedicle proper they were softer, having a feeling of ordinary subcutaneous fatty tissue. The ulcer allowed some of them to be seen. They varied in size and consisted of fibrous and fatty tissue.

Mammary hypertrophy appears either at puberty or during pregnancy, and a distinction is drawn between the two forms of hypertrophy. In the first fibrous tissue in which occur a few galactiferous ducts forms the bulk of organ; in the second there is a large amount of glandular tissue; in one of Billroth's cases the acini were considerably above average size. In the present case there were none of the ordinary periodic symptoms such as occur in cases of suppressed menstruation. The writer thinks that with the onset of menstruation there was an increased stimulus to the growth of the breasts and that the balance between them and the internal reproductive organs was deranged by the suppression of menstruation. The prodigious growth of the breasts seemed to be at the expense of the pelvic organs. The amenorrhœa he regards as possibly a toxic effect of the myrtle berries.

See also "REVIEW," Vol. II., p. 61 and Vol. III., p. 61.

Puerperal Septicæmia from Double Pyosalpinx.—Dr. Robert Jardine (*Glasgow Med. Jour.*, Jan., p. 48).—A woman, aged 20, was admitted to hospital, and delivered with forceps, as the second stage was somewhat prolonged. The first and second stages lasted 24 hours. The perineum was partially torn, and 3 sutures were required.

There were some copper-coloured scars on the buttocks, and a history was given of ulcers 2 years before. Syphilis was strongly suspected. On the third day of the puerperium the temperature, which had been normal, rose to 101° , and the pulse to 130. On the fourth day the temperature rose to 102° . An intra-uterine douche was given, but the lochia seemed perfectly sweet. Quinine, 10 gr., was administered. On the fifth day the temperature fell to 100° in the morning, but rose to 102° in the evening. An intra-uterine douche was again given, but nothing was washed out.

The abdomen was distended and painful. No pelvic swelling could be made out per vaginam, and the distention prevented anything being felt bimanually. As there had been persistent diarrhœa for 3 days typhoid fever was suspected. There were no rose spots, enlarged spleen, or epistaxis. The blood gave a doubtful Widal reaction. A second specimen taken 2 days later gave a decidedly negative reaction. The severe diarrhœa persisted. The temperature varied between 100° and 102.6° , and the pulse from 100 to 130. The pulse grew gradually weaker, and death occurred on the ninth day. Just before death the temperature rose to 104° .

NECROPSY.—On opening the abdomen a thick, opaque, sanguineous fluid, containing numerous flakes of curdy pus, escaped from the lower abdomen, chiefly from the right side. The intestines were distended, injected, and slightly glued together. The right Fallopian tube was swollen and injected; a quantity of purulent necrotic material was found at the ostium. The ovary was soft and gelatinous; it seemed to have formed the posterior wall of a large pyosalpinx. The left tube and ovary were in the same state. The interior of the uterus was healthy.

No doubt this was a case of old double pyosalpinx. The abscesses were certainly not recent. If they were both present before impregnation, how did the ovum find its way into the uterus? The writer would have performed laparotomy if he had been able to exclude typhoid fever at once. When he received the second report the woman was dead. He has seen another very similar case. The child was born before the doctor's arrival, and there had been no vaginal examination. The house was a good one, and the nurse was competent. Profuse diarrhœa set in, and was accompanied by pyrexia. There was some tenderness at the side of the uterus. Dr. Jardine suggested that the source of infection was the tube, and then ascertained that the husband had gonorrhœa 2 years before. The Widal reaction was

negative. The patient improved for a time, but died about 10 days later. If she had been in hospital he would have opened the abdomen, but under the circumstances this was impossible.

Such cases are exceedingly rare; but, in dealing with puerperal septicæmia, it should be borne in mind that the source of infection is not always in the vagina or uterus. The writer has reported 2 unusual cases of puerperal septicæmia—one in which a poisoned finger was the source ("REVIEW," Vol. III., p. 381), and the other in which there was gonorrhœal rheumatism, with pus in the knee-joint. The child in the latter case has now marked congenital syphilis. There was thus mixed infection. In the case just reported syphilis was also present.

Hæmatoma of the Abdominal Walls during Pregnancy.—W. Stœckel (*Centralbl. f. Gyn.*, March 9, p. 241) reports two probably unique cases.

CASE 1.—A woman in the seventh month of the fourth pregnancy had a violent fit of coughing, which was followed immediately by the appearance of a painful swelling above the pubes that reached almost to the umbilicus and extended more to the right than the left. Next day there was uterine hæmorrhage and a 26-weeks' fœtus was extracted. The swelling, which was incised, proved to be a hæmatoma. After being packed with gauze it healed rapidly. There were 2 per mille of albumin in the urine but no casts. The site of the hæmatoma corresponded to the distribution of the inferior epigastric artery.

CASE 2.—A multipara had a violent fit of coughing, 8 days before term labour commenced. A sensation of something tearing in the abdomen immediately followed, and a small tumour appeared, which increased in size with every cough and became more and more painful. After a normal labour she entered

hospital, with an elastic fluctuating swelling of the size of a fœtal head in the right hypochondrium. It began about $\frac{3}{4}$ in. under the costal arch, did not extend beyond the middle line, and reached downwards to the umbilicus; it corresponded therefore to the distribution of the right superior epigastric artery, or the anastomosis between this and the inferior epigastric. There were large yellowish brown spots below this on the umbilical walls and on the right hip, and numerous miliary petechiæ on the limbs and thorax. The gums were normal. The hæmatoma was incised and packed with gauze after evacuation of the clots. Healing was rapid, and the petechiæ disappeared. Possibly this was a mild case of morbus maculosus Werlhofii.

The Treatment of Sterility from Displacements and Hypoplasia of the Uterus.

—R. Chrobak (*Wien. Klin. Woch.*, Dec. 19, p. 1252).—In cases of sterility due to slight hypoplasia of the uterus accompanied by scanty and irregular menstruation and sexual anæsthesia, also in cases of uterine atrophy and amenorrhœa after lactation the introduction of laminaria or tupelo tents may effect a cure by dilating the cervical canal. The most frequent cause of sterility is prolapse combined with retroversion and retroflexion.

(1) When the perineum, the posterior vaginal wall, or levator ani are ruptured in multiparæ the natural H-shape of the vagina, which secures the retention of semen on the withdrawal of the penis, is lost and the semen escapes immediately. The treatment in such cases is that of the disease, either by operation or pessaries.

(2) Though the escape of semen from the vagina after coitus does not exclude the possibility of conception it frequently occurs in sterility, and is a symptom of great though little recognised importance. The direct ejaculation of semen into the os can only occur if it and the urethra are in exact apposition. Normally the semen

remains in the posterior fornix in considerable quantity, so that, though the layer in contact with the acid secreting vaginal wall may be rendered inactive, the more centrally situated portion in contact with the alkaline cervical secretion remains for some time capable of fecundation. In sterile nulliparæ there is frequently congenital retroversion of the uterus combined with more or less hypoplasia of the genital tract, which is not, however, of such degree as to necessarily exclude conception. The vagina is short, narrow, inelastic, and straight. The posterior fornix is deep and inferiorly patent, because the conical, narrow, but usually long and often prolapsed portio vaginalis lies in the axis of the vagina or even more anteriorly, so as to rest in a pouch of the anterior vaginal wall. Movements of the uterus are painful, because the ligaments are short and tense, and the appendages consequently sensitive. In these cases the penis passes by the os into the deep posterior fornix and distends the whole vagina. On its removal the distended vagina contracts and the semen is forcibly ejected.

The best treatment in these cases is incision of the cervix. Bilateral incision of the os is useless. The writer divides the posterior lip of the os sagittally and continues the incision upwards to the posterior fornix of the vagina. Patency is ensured by excision of a wedge-shaped piece of the cervical wall on either side and by suturing the mucous membrane over the wound. By these means an enlarged artificial os is made, which looks directly backwards, and the chances of direct penetration of semen into the uterus are increased. Even if this does not occur the semen comes into direct contact with the cervical mucosa. In a long series of cases conception followed this operation. So convinced is Chrobak, however, of the important part played by escape of semen in the production of sterility, that he now considers its habitual occurrence an indication for the radical cure of the accompanying retroversion and retroflexion by shortening the round ligaments. This he

generally performs by a vaginal operation. Ventrifixation is also an excellent operation, but is not justified by seminal escape alone.

Operative Treatment of Prolapse of the Uterus.—Prof. H. W. Freund (*Centralbl. f. Gyn.*, May 4, 1901, p. 441).—In defining the indications for the various operations for prolapse of the uterus and vagina it should be recognised that the bladder is the most important cause of prolapse of the vagina, and of relapses after operations. A cystocele is never secondary to retroflexion and retroversion of the uterus, but is the primary lesion. Rarely, however, vaginal prolapse and uterine retroflexion may arise simultaneously as the result of a single injury. Even then the cystocele is the more important lesion and treatment should be directed chiefly to its cure. Total prolapse, in which the uterus with the greater part of the bladder, the anterior wall of the rectum, and occasionally some coils of small intestine participate, constitutes practically a large hernia through the natural pelvic outlet.

(1) Colporrhaphy is the best operation for uncomplicated cases of vaginal prolapse, especially if the cystocele is slight. Anterior colporrhaphy succeeds well in uncomplicated cases; posterior colporrhaphy in both complicated and uncomplicated cases. The result depends largely on the presence of a firm perineum, and simultaneous perineoplasty is often necessary. It is most important in ruptures of the perineum extending into the rectum to unite the loose ends of the sphincter ani.

(2) Anterior colporrhaphy is insufficient for prolapse, when complicated, for instance, by well marked cystocele. It is first necessary to fix the bladder so that it no longer becomes prolapsed or obstructs the performance of a further operation on the cervix or corpus uteri, if these are implicated in the prolapse. The bladder should be freed through a vaginal incision and then

fixed by catgut sutures passed through the firm paravaginal pelvic connective tissue; the writer operates by a modification of Gersuny's colpo-cystopexy.

(3) In not too extreme cases W. A. Freund's method of suturing the fundus uteri to the vaginal wall, after opening Douglas' pouch, may give good results. The fundus is brought down into the vagina and after freshening of a portion of the posterior vaginal wall is fixed there by sutures. On the other side it may be similarly fixed to the anterior vaginal wall. The opportunity should be taken of closing any vesico-vaginal or recto-vaginal fistulæ by the body of the uterus. The disadvantage of the operation is that it is suitable only for elderly women in whom uterine secretion has ceased. In all extreme cases of eventration laparotomy is indicated. Simple ventro-fixation is often insufficient, since the dilated Douglas' pouch soon becomes again distended by the abdominal organs. Freund, therefore, roofs over the pelvic inlet by drawing the sigmoid flexure obliquely across it and fastening 2 of its appendices epiploicæ to the peritoneum on the right side of the abdominal incision. Douglas' pouch is previously cleared completely of intestines and omentum (*ventro-fixatio uteri et flexuræ sigmoideæ*).

Total extirpation of the vagina and uterus, advocated by some, is unjustifiable and unnecessary.

pain but no œdema. The febrile conditions lasted 2 months with exacerbations almost every evening. Then the swelling decreased from above downwards and she went about on crutches for 6 months. Œdema of the ankles continued to appear on exertion and a slight wound caused a varicose ulcer on the left leg, which lasted 3 years.

Eleven years after this attack, without an intervening pregnancy, a second attack of phlebitis occurred and confined her to bed for $3\frac{1}{2}$ months. The pain and swelling were limited to the left side of the abdominal wall, where there were thick red knotted cords which were very tender.

A third attack occurred 2 years later. She had a sudden sense of oppression and became unconscious for a short time. Possibly the attack was embolic. Next day phlebitis began on the right side of the abdominal wall and extended from the groin to the xiphoid cartilage. A few days after the attack she walked to hospital. The phlebitis had ascended from the subcutaneous abdominal and epigastric vessels to the origin of the internal mammary veins on the right side. These veins formed large sinuous knotted cords, in some cases visible, in others only palpable. There was some vomiting. The heart, lungs, kidneys, and other organs were quite normal. Treatment consisted of rest in bed and the application of a flannel binder. She left hospital after 2 months somewhat improved—the flannel bandage being replaced by an elastic one.

Puerperal Phlebitis with Relapses at Remote Dates in Unusual Sites.—M. Pinatelle. (*Gaz. Heb. de Méd. et de Chirurg.*, Dec. 19, p. 1201).—A woman, aged 22, had a normal labour. On the third day of the puerperium there was pain in the lower limbs. On the ninth day phlebitis appeared in both legs with great pain, and the temperature rose each evening. The swelling spread rapidly and involved simultaneously both thighs and the abdominal wall. In the arms there was some

Hemoptysis during Pregnancy and Lactation.—Dr. J. Charvet (*Journal de Médecine de Paris*, Oct. 27, p. 437).—The observations reported in the first half of last century, did not show the origin of these hemoptyses. Trousseau wrote that he had seen women during pregnancy and lactation spitting blood, but that these hæmorrhages, which ceased spontaneously after delivery or after lactation,

were not symptomatic of tuberculosis or heart disease. He thus distinguished hemoptysis, of bacillary origin, of cardiac origin, and essential hemoptysis. Churchill and, later, Nutte (*Les hémoptysies gravidiques, Thèse de Paris, 1887*) recorded hemoptysis *sine natura*. Peter (in *Cliniques*) had already drawn attention to hemoptysis in pregnant women with cardiac disease and had helped to determine its nature. Little by little the more careful examination of patients, the more minute enquiry into their antecedents, and finally the course of the affection, showed that it was necessary to reduce more and more the category of essential hemoptysis. The supposed hemoptysis of pregnancy is usually tubercular, more rarely neuropathic or hemophilic.

The writer thus classifies the so-called hemoptysis of pregnancy, which are independent of tuberculosis:

- (a) Hemoptysis due to hemophilia, hysteria, or the arthritic diathesis.
- (b) Hemoptysis in pregnant women with cardiac lesions.
- (c) Hemoptysis without established origin, or essential hemoptysis.

With regard to hemoptysis due to cardiac lesions, Peter concludes that (1) Mitral lesions particularly cause hemoptysis. (2) The hemoptysis generally appears at the fifth month of pregnancy, the prognosis is grave for mother and child, and labour is frequently premature. (3) Hemoptysis ought to be a warning against future pregnancies and lactations. There is abundant, repeated, bloody expectoration, composed of pure blood more or less black, during an attack of asphyxia, with cyanosis, orthopnoea, acceleration and irregularity of the heart. The reason for onset at the fifth month, is that then the volume of the foetus has become considerable and the

work of the maternal heart markedly increased. At this time, every occasional cause of the condition ought to be carefully avoided.

As to the other causes of hemoptysis, neuropathy ought to be placed first, then hemophilia and different intoxications; hysteria is often the etiological basis.

Puerperal Pelvic Arthritis.—P. A. Lop (*La Presse Méd.*, Nov. 23, p. 293).—The pelvic articulations being modified during pregnancy are liable to injury and infection. The most susceptible is the pubic symphysis. A primipara after a very painful labour and some fever during the puerperium attempted to rise on the 6th day, but found she could neither walk nor sit. Sitting produced intense pain in the sub-pubic region, radiating into the vagina. Twenty-three days after her confinement she could neither walk, stoop, nor sit, and could only micturate or defæcate standing or lying. At the end of a month she could walk a little, and sit for a few seconds. The writer found relaxation and inflammation of the sacro-iliac articulations, with abnormal mobility of the symphysis pubis. These conditions explained the following functional disorders: (a) The waddling gait; (b) the difficulty in sitting and stooping; (c) the difficulty in micturition, for the full bladder was nipped between the mobile pubic bones. The treatment was absolute rest, with the application of silicated bandages, and in 40 days the patient was cured. She was confined a second time, fifteen months afterwards, without any articular troubles. Lop regards the sacro-iliac arthritis in this case as secondary to the loosening of the symphysis caused by the extraction of the child.

NOTES.

BILLS OF MORTALITY.—Certain changes in the nomenclature of disease suggested by the Registrar-General in a recent "Weekly Returns of Births, Marriages, and Deaths," remind us that the History of Nosology has yet to be written. As a writer in the *Lancet* points out, medical men are now warned, when returning the cause of death of a patient to the local registration office, "against using in future such misleading terms as 'tabes mesenterica' and the familiar 'convulsions,' 'apoplexy,' and 'phthisis.'" "Puerperal fever" and "diarrhœa" are also condemned in the interests of greater accuracy. Yet, occasional misstatements today are insignificant when compared with those of so recent a date as the beginning of the late Queen's reign. It will scarcely be believed that up to 1837, when the Registration Act was passed, deaths still continued to be recorded in the eighteenth century manner. The work of registration was carried on, and had been carried on since the days of the Great Plague and earlier, by a City Corporation, the Company of Parish Clerks, which yearly presented to the King a truly mediæval document entitled, "A General Bill of all the Christenings and Burials," occurring from December to December in London and 23 out-parishes in Middlesex and Surrey. The Bill or Report is a perfect specimen of the prettily-printed broadside dear to collectors. It bears in the two upper corners the Royal and Civic Arms, and, up to the year of Waterloo, was adorned with a primitive arabesque

border representing skulls, cross-bones, and hour-glasses, emblematic of mortality. In 1815-1816 a new and more florid border appears, in which the hour-glasses are winged. So fine is the new design that we are at first inclined to believe that it commemorates some signal change in the manner and matter of the Bill it encloses. Nothing of the kind. The Parish Clerks continued mediæval to the last, as became their calling. Their Bill for 1817, for instance, is very much the same in point of Nosology as is theirs for 1779. In 1816-1817 "The Diseases and Casualties this year" are thus recorded. "Abortive and Still-born 700, Abscess 98, Aged 1875, Ague 2, Apoplexy and Suddenly, 462, Asthma 743, Bedridden 5, Bile 6, Bleeding 45, Bursten and Rupture 43, Cancer 99, Chicken Pox 1, Child-bed 252, Colds 14, Colic, Gripes, &c., 7, Consumption 4200, Convulsions 3242, Cough and Hooping-Cough 645, Cow Pox 1, Cramp 1, Croup 109, Diabetes 3, Dropsy 718, Epilepsy 5, Evil 6, Fevers of all kind 1299, Fistula 3, Flux 9, French Pox 86, Gout 54, Gravel, Stone, Strangury 24, Grief 4, Headmoldshot (overlapping of cranial bones), Horshoehead (non-union of the cranial sutures), and Water in the Head 419, Imposthume (Abscess) 2, Inflammation 1002, Jaundice 75, Jaw Locked 2, Livergrown 76, Lumbago 1, Lunatick 244, Measles 725, Miscarriage 6, Mortification 304, Palpitation of the Heart 4, Palsy 162, Pleurisy 22, Purples 1, Quinsy 2, Rash 2, Rheumatism 11, Scrophula 5, Scurvy

6, Small Pox 1051, Sore Throat 5, Sores and Ulcers 11, Spasm 25, St. Anthony's Fire 7, Stoppage in the Stomach 24, St. Vitus's Dance 1, Stricture 1, Swelling 1, Teeth 449, Thrush 111, Tumor 3, Water in the Chest 68, Worms 12, Broken Limbs 6, Bruised 2, Burnt 41, Choaked 2, Drowned 119, Excessive Drinking 12, Executed 10, Found Dead 29, Fractured 4, Frighted 9, Killed by Falls and several other Accidents 65, Killed themselves 34, Murdered 3, Poisoned 6, Scalded 4, Shot 1, Starved 8, Strangled 1, Suffocated 11." A note, customary in the Bills of Mortality of that time, is appended to the effect that "There have been executed in London and the County of Surrey, 26; of which number 10 only have been reported to be buried within the Bills of Mortality."

Sir John Simon was born in one of the years to which this surprising broadside refers, and with his early and famous colleague, William Farr, was one of the first to introduce the new order in State Medicine. In his long and philosophic letter to the Registrar General, dated May, 1839, and published in the latter's "First Annual Report" of the same year, Farr disdains to discuss the quaint farrago of cross-references and archaic terminology above-quoted, but he sets forth an elaborate "Statistical Nosology," afterwards issued to all medical men, in which an effort is made to substitute Cullen's classification for that of the poor old Parish Clerks. On this "Nosology" of Farr's Registration Returns have doubtless been based ever since, and now that it is undergoing change it is but fair to remember that it was the first of its kind to be published in England, and that it superseded a most primitive classification.

In his famous "first letter" Farr has occasion to mention the conservatism of

practitioners who could not be induced to abandon the old bad methods. In the early entries of causes of death, made under the new Act, occurred such merely local names as "hives," a synonym of varicella, which however, in certain northern counties, signified inflammation or mesenteric disease. Again "fit" and "decline" and "scurvy" were used in a vague and misleading manner. The Parish Clerks manifestly were holding their own, for their reign had been age-long. In the seventeenth century, Farr candidly admits, their humble statistics had been of use. Sydenham, "one of the most accurate of medical writers," had apparently only guessed at the intensity of small-pox between the years 1661-1672. "The method of the parish clerks, although imperfectly carried out, was the best. Sydenham guessed the quantity with sagacity, and called it great or small; the parish clerks measured it, and stated the results in figures. The present registers will furnish medical science with an unbroken series of observations expressed numerically." In speaking of 1837 (June-Dec.), Farr says, "It may be safely asserted that the parish clerks registered little more than half the deaths" in London.

PRIMITIVE ORGANO-THERAPY.—It is a question whether the Boers derive the nauseating remedies, lately described in the "Report on the Concentration Camps," from the Holland or the Huguenot France of the seventeenth century, or from the natives among whom they have so long sojourned. Savages employ human and animal excretions and secretions as cures for various diseases. The natives of Queensland, according to Spenser and Gillan, store *semen virile* in earthen receptacles as a valuable nostrum. And even orgiastic Hindoo sects, such as the

Aghoris and Bauls, are said, on the authority of that indefatigable and little-known anthropologist, the late Tyrrell Leith, of Bombay, to attach a mystical importance to the same substance. The reason for this is not far to seek. To the savage or primitive man everything that issues from man, be it blood, sputum or what not, is sacred. It contains, as he believes, life, or what a later age would call "soul" or "spirit," and, according to barbarian methods of reasoning, it must, if possible, be re-assumed by the person losing it, or by his kindred. The Red Indian's habit of eating the liver of his fallen foe is only an extension of the same idea. To be nourished by the vitals of the dead "brave" is to add his courage to yours. Even among the English peasantry relics of such beliefs still linger. A rustic mother in the Isle of Wight will not cut her baby's nails till the child is at least six months old. Some think a year a safer period. She *bites* them off when first it becomes necessary to shorten them. What is certainly true of Hampshire is probably true of the whole of England and Lowland Scotland. And the Hindoo, swayed by a similar superstition, burns his nail-parings, rather than permit this part of his essential self to go adrift, and, as it were, be lost to him. The mass of data proving the cannibalistic origin of many primitive therapeutic beliefs, increases as the customs of savage tribes are examined.

A surgeon at the front has described how goat-droppings mixed with oil are taken as a medicine by Boers sick, presumably, of a virulent form of measles. In another place we read of goat-droppings being mixed with wormwood and drunk as a sovereign cure for disease. But on turning to Remedy 35 in a "chap-book," printed for Easton of Salisbury in 1791, it is gravely stated that "Goat's dung mingled with

vinegar and bran, and applied as a plaster to a sore breast, looseth wonderfully all swellings of the breast." In the Plantagenet epoch the excrement of the ox was recommended as a plaster for cancer. The Boers employ raw beef as a plaster, but in this they do not differ from our own pugilists.

The use of urine to cure wounds is not peculiar to the Boers. Isle of Wight rustics, until quite recently, dipped their hands overnight in their own urine to cure chaps and to ensure pliability and the result next morning was pronounced quite satisfactory. Urine contains phosphates, and old-fashioned Scottish practitioners well remember the time when the "strang-bine," standing at the back of the prosperous cottar's lobby, was piously resorted to by guests and family alike, who thus assisted the progress of the weekly farm-house washing-day. The "strang" contained alkalis, an excellent substitute for soap, in an age not very familiar with that article. A parallel is found in the France of the Second Empire, where human urine was used in the process of dyeing the soldiers' trousers red. Remedy 28 in the "chap-book" above referred to is as follows :—"An universal and excellent remedy for all Distempers inward and outward. Drink your own Water in the morning nine days together, and it cures the Scurvy, makes the body lightsome and cheerful. It is good against the Dropsy and Jaundice, drank as before. Wash your Ears with it warm, and it is good against Deafness, Noise, and most other Ailments in the Ears. Wash your Eyes with your Water, and it cures Sore Eyes, and clears and strengthens the Sight. Wash your Hands with it, and it takes away Numbness, and makes the Joints limber. Wash any green Wound with it, and it is an extraordinary good thing. Wash any part that itches, and it takes it away."

It would be possible to discourse at large on the various curious therapeutic uses recommended in the popular eighteenth-century "chap-book" from which we have quoted, to which the blood of hares, the galls of oxen, the caul of infants and their navel-strings, may at any time be put. We might go back several centuries and show how frequent a curative agent was human milk, especially that of a woman "that hath been a mayde and hath borne a knave." The pharmacopœia of the savage medicine man, the mediæval witch, and the peasant in all time, deserves a more careful study than has been accorded it. The investigations of the United States Ethnological Survey, and of such indefatigable and accurate workers as Messrs. Spenser and Gillan perhaps point to a new era in the history of medicine. The tabloid derived from animal substance may in time be fully deduced from its barbaric original.

AIR-BORNE SMALL-POX.—In the neighbourhood of small-pox hospitals the disease has long been observed to occur with special incidence. Whether the infection is air-borne or is carried from the hospital by human intercourse is disputed by sanitary authorities. The observations of Dr. Thresh, Medical Officer of Health of the County of Essex, which are published in the *Lancet* of Feb. 22, appear to prove conclusively that the infection is air-borne. The small-pox hospital ships of London are anchored in the Long Reach of the Thames opposite the Orsett district of Essex, with which no communication is permitted. From 1895 until the autumn of 1901, Essex was almost free from small-pox. But when the present epidemic commenced in London cases occurred in the Orsett district, and as in former epidemics

they began in the hamlet of Purfleet, which is the nearest point to the ships. By the middle of Sept., 1901 a few cases had occurred; others followed in rapid succession, until on Feb. 1, 1902, about one-tenth of the whole population of Purfleet had been attacked. The outbreak soon spread to the adjoining parishes, and now is gradually extending to all parts of the county. Up to Feb. 1 there had been 290 cases of small pox in the Orsett Union; 42 of these occurred in Purfleet, the only centre of population within a mile of the ship; 50 in the remaining portion of the West Thurrock parish; and 198 in the other parishes of the Union. The incidence of the disease decreased with the distance from the ships. Thus the rates per 1000 of population in Purfleet, in the remaining portion of the parish of West Thurrock, in the other parishes of the Orsett Union, and in the remainder of the county of Essex, were respectively 88, 24, 2·8, and 0·21. Still more cogent proof that the infection was air-borne is furnished by the relation between the prevalent wind and the distribution of the disease. The most prevalent wind is south-westerly and west-south-westerly, which blows from the direction of the ships over South Purfleet. Over West Purfleet, on the other hand, the wind seldom blows. In South Purfleet, with a population of 342, there have been 41 cases, 12 per 1000; in West Purfleet, with a population of 137, there has been only 1 case, ·8 per 1000. It is difficult to ascertain to what distance the infection may be carried by the air, but Dr. Thresh thinks that in the direction of the wind it may be carried 2, or possibly 3 miles. It is worthy of notice that the well vaccinated and re-vaccinated community on board the training ship lying off Purfleet has entirely escaped infection, not a single case of small-pox having occurred.

LEADING ARTICLES.

BRIT. MED. JOUR. Dec. 21, p. 1803.

Pneumococcic Arthritis.

BY NATHAN RAW, M.D., M.R.C.P.

In 1891, Dr. Cave, of Bath, published the first case of pneumococcic arthritis, which has been recorded in England ("REVIEW," Vol. IV., p. 75) but cases of arthritis in pneumonia had been previously observed. He also analysed the 31 recorded continental cases. Dr. Raw is surprised that other cases have not been described in this country, and thinks that the condition is not so rare as might be supposed. During the last 4 years he has had under treatment in Mill Road Infirmary, Liverpool, an institution containing over 800 beds, 887 cases of acute pneumonia. As many of the patients were addicted to alcohol the mortality was high—24 per cent. Arthritis occurred in 7 cases.

CASE 1.—A man, aged 28, was admitted with right pneumonia. The whole lung was involved, and the attack was severe. The crisis occurred on the eighth day; on the eleventh day there were a rigor, intense pain in the right ear, and a sudden rise of temperature. Next day a painful and tender swelling appeared over the second right costal cartilage. Two days later a large abscess rapidly formed in the right buttock. Incision showed that the swelling on the chest was an abscess of the right sterno-clavicular joint pointing between the first and second ribs; the abscess of the buttock was drained, giving exit to a large quantity of pus. An abscess in the middle ear burst on the same day, with great relief. The pus from every source described and the sputum, contained the pneumococcus in pure culture. Recovery ensued.

CASE 2.—A man, aged 52, was admitted on Jan. 5, 1900, with severe pain in the right chest and profuse dark expectoration. There were pain and swelling in the right ankle and swelling and tenderness of the right sterno-clavicular joint. Next day pneumonia at the right apex and effusion at the base were found. The joints seemed to have swelled before the onset of the pneumonia. When pus was found they were freely incised and drained. Both were roughened and bare. The pneumonia ran an ordinary course. Later an empyema developed and was opened and drained. Repeated cultures were made from the pus and sputum, and the only pathogenic organisms found were pneumococci. Recovery took place after a long illness, but the ankle joint remained stiff.

CASE 3.—A woman, aged 49, addicted to alcohol, was admitted on June 11, 1900, with severe pain in the right chest and abdomen and all the symptoms of acute pneumonia. The crisis occurred on the seventh day. Two days later a swelling appeared under the right deltoid muscle, and there was great pain on movement. A needle was inserted into the joint and pus withdrawn. Free incision let out 18 ounces of curdy pus. There was considerable infiltration between the muscles around the joint. The temperature fell, and she appeared to be doing well for 12 days, when a right empyema developed. This was opened and drained. Then a large abscess developed in the abdominal wall, and was drained. Pyæmia developed and death occurred on the twenty-eighth day. Pneumococci in pure culture were obtained from the pus and sputum.

CASE 4.—A man, aged 23, was admitted with acute right pneumonia. The crisis occurred on the seventh day. Two days later a painless

swelling of the right knee developed with a temperature of 100°. Clear serous fluid containing pneumococci in abundance was drawn off. By aspiration 7 ounces of fluid were removed and the joint was firmly strapped. After a tedious convalescence recovery took place with a useful joint.

CASE 5.—A man, aged 43, a confirmed alcoholic, was admitted in a state of collapse with right pneumonia. Two days later, the sixth day of the disease, there was a painless swelling of both knees. Aspiration yielded sero-fibrinous effusion which contained pneumococci in pure culture. Death occurred on the following day. The necropsy showed severe pneumonia with arthritis of both knees.

CASE 6.—A drunkard, aged 58, was admitted on April 13, 1900, with right pneumonia. The crisis occurred on the seventh day, when he was seized with great pain in the right knee, and rapid distension of the joint took place. Aspiration yielded sero-pus, which on staining showed pneumococci with well-defined capsules. The joint was opened and drained. It discharged pus for 2 weeks and eventually healed. The patient was discharged with the knee stiff, but not ankylosed.

CASE 7.—A man, aged 42, was admitted on July 12, 1901, with right pneumonia. He complained of great pain in the right shoulder, which was dusky-red and inflamed. He died before any operation could be performed. The fluid from the shoulder yielded pneumococci in pure culture. Extensive intramuscular infiltration was found around the shoulder-joint.

Of these 7 cases 3 were fatal. In all the cases the pneumonia was right-sided and the joints affected were all on the right side, but this was probably only a coincidence. The writer has observed in some cases of pneumonia slight redness and pain in the

shoulder-joint of the side affected, which subsided with the crisis. The arthritis may precede the lung symptoms, follow the crisis, or develop intercurrently. The treatment is early evacuation of the pus.

TABLE OF CASES.

Sex.	Age.	Relation to Pneumonia	Seat of Arthritis.	Nature	Complications and Remarks	Result
M.	28	Pneumonia 3 days before	Right sterno-clavicular joint	Suppurative.	Right otitis media, abscess of thigh	Recovery
M.	52	Pneumonia 2 days after	Right ankle and right sterno-clavicular joint	Suppurative.	Right empyema, joint stiff	Recovery
F.	49	Pneumonia 2 days before	Right shoulder joint	Suppurative.	Right empyema, extensive cellulitis of shoulder	Death
M.	23	Pneumonia 2 days before	Right knee	Serous		Recovery
M.	51	Pneumonia 2 days before	Both knees	Serous		Death
M.	58	Pneumonia 3 days before	Right knee	Suppurative.	Stiff, though fairly useful joint	Recovery
M.	42	Pneumonia about same time	Right shoulder	Suppurative.	Extensive cellulitis of shoulder	Death

ST. THOMAS'S HOSPITAL REPORTS,
Vol. xxviii.

Transient Ataxy and Tetany after Diphtheria.

By CHARLES R. BOX, M.D., B.Sc., M.R.C.P.

A house physician, whilst feeling somewhat out of health, assisted at 3 tracheotomies for diphtheria within 36 hours. During one operation a quantity of fluid from the trachea was ejected on his face but was immediately washed off. Next morning but one he awoke with a splitting headache, and had a rigor. The throat was injected, but no follicular secretion or membrane was visible. At mid-day he felt feverish and went off duty. He had an uncomfortable night, being disturbed by epigastric pain and a sense of suffocation.

The temperature was 103.2° , and the fauces were much injected. During the succeeding night a nasal discharge appeared and soon after a small piece of membrane was expelled from the nose. On the third day diphtheria bacilli of the long variety were reported present in a culture taken from the throat. Seven thousand units of antitoxin were injected. The nose and throat were irrigated with a free-chlorine mixture. The temperature in the evening was 103° , but had fallen nearly 3° next morning. On the fourth day 7000 units were injected and a small patch of membrane appeared on the tonsil. The fauces were almost closed by œdematous swelling, and the submaxillary glands were greatly enlarged. A complete cast of the turbinal bone was expelled from each nostril. The temperature became normal and the throat rapidly assumed a healthy appearance.

On the fourteenth day the patient experienced a feeling of oppression in the chest and precordial pain. In the evening the pain increased and radiated into the arms. Tingling of the fingers and dyspnoea ensued, and finally the pain extended to the legs. The hands were clenched, the wrists fully flexed, and the arms powerfully pronated. The legs were extended and the feet in a position of extreme plantar flexion, with flexion of the toes. The back was slightly arched, but the jaws were not affected. The patient spoke with difficulty, and complained of extreme pain in the wrists, ankle-joints, and chest. After some time the spasm gradually passed off, but recurred in less degree the following night. During convalescence slight spasms recurred in the arms for many weeks.

Slight regurgitation of fluids through the nose, nasal intonation, and tingling of the tongue and finger-tips were noticed about the end of the third week after the onset

of the diphtheria. The regurgitation lasted a month. The patient was allowed to sit in a large chair, but took to bed again on the sixty-first day. The legs were weak and hyperæsthetic. Tenderness was so great that it was impossible for him to sit with his legs crossed. The external popliteal nerves were tender. The knee-jerks were easily obtained. The fingers were partly anæsthetic, and the arms paretic. The right external rectus was deficient in action, but accommodation appeared perfect.

Ataxic symptoms were definitely noticed on the seventy-third day, but they may have been present a few days previously. The patient could not stand, and in attempting to walk reeled in all directions. The movements of the arms were inco-ordinate and appeared almost choreic. On attempting to brush his hair he threw the brush out of the window. In trying to feed himself he narrowly escaped injuring his eyeball with the fork. The sense of position appeared quite absent; he never knew where his arms and legs were. The fingers and hands were partly anæsthetic, and there were troublesome subjective sensations in the arms and feet. The soles were intensely hyperæsthetic. The knee-jerks could be obtained with difficulty. In the dark he was helpless and on one occasion fell out of bed. Muscular weakness was inconsiderable, and the erratic movements were very forcible. After 3 weeks he rapidly improved. For some time standing on a carpet was painful, the sensation being that of standing on tin-tacks. At this period the knee-jerks were absent. There was never marked wasting of the leg muscles. Three years later he was in good health.

Authorities are beginning to recognise that ataxy may occur after diphtheria, as after other infective or toxic diseases in which peri-

pheral neuritis occurs. When slight motor paralysis is present it may be difficult to determine whether irregularity of movement is merely due to the muscular weakness or to true inco-ordination. In children recovering from diphtheria, a staggering gait is not unusual. Dr. H. W. G. Mackenzie found such symptoms as staggering, stumbling, giving way of the legs, etc., in 33 out of 955 cases (*St. Thomas's Hospital Reports*, 1893). Sometimes the staggering was so great as to suggest cerebellar disease. In at least one case cerebellar tumour was diagnosed. Not uncommonly children about the sixth or eighth week became tottery and frequently fell. This occurred in many cases in which no actual loss of power was manifest. Sometimes the inco-ordination preceded the latter. The knee-jerks generally disappeared at a later period. As a rule the inco-ordination lasted only a few weeks. Sir William Gowers says that inco-ordination may be marked in diphtheria when there is little or no loss of power, and that it may occur independently of any sensory affection. He points out the possibility of mistaking it for locomotor ataxy, especially when anæsthesia and loss of knee-jerks co-exist. In most of the reported cases the inco-ordination manifested itself some weeks after the infection, and was accompanied by motor paralysis, which was sometimes slight, sometimes severe. Slight sensory affections were present in the limbs, and sooner or later the knee-jerks were lost. After some weeks the ataxy diminished, and it finally disappeared. The course is thus similar to that of the ataxy of influenzal and alcoholic neuritis. Such complete loss of the sense of position, as is in the case now recorded, is rare. The writer has never observed such complete inability to appreciate the position of the limbs. He attributes the ataxy to peripheral neuritis,

which prevented the transmission of the afferent impulses—principally those from the muscles and bones—on which the sense of position depends.

The transient attacks of muscular spasm may be designated tetany. This is an uncommon complication of diphtheria. In over 700 cases of diphtheria which the writer observed for practically the whole period only 3 cases of tetany occurred. In one, in a female, aged 23, a neurotic element could not be excluded. The second patient was a child. In the third case (the one now recorded), the spasms were far the most severe.

PRACTITIONER, Feb. p. 186.

Obstructive Jaundice and Hepatic Colic from Movable Kidney.

By J. HUTCHINSON, jun., F.R.C.S.

Attention has lately been directed to cases of biliary obstruction from floating kidney, which were cured by nephropexy. ("REVIEW," Vol. III., pp. 88, 91, 224; and Vol. V., p. 19). Well marked examples, however, are not common. Dr. H. Bramwell has recorded a case in which a floating kidney so dragged upon the first part of the duodenum as to cause fatal dilatation of the stomach in a young woman. (*Brit. Med. Jour.*, 1901, p. 1135.)

RECURRENT ATTACKS OF JAUNDICE; FORMATION OF RIEDEL'S LOBE; FLOATING KIDNEY, CHOLECYSTOTOMY AND NEPHROPEXY; CURE.

CASE I.—A married woman, the mother of 4 children, in 1896, at the age of 25, had a severe attack of jaundice attended with colic. In 1899 and the 2 following years she suffered from pain, chiefly after exertion and after taking solid food. She lost much weight and at

Christmas, 1900, had a second slight attack of jaundice. There was habitual constipation. On Feb. 8, 1901, she was admitted to hospital. The jaundice had disappeared, but she still suffered from severe pain in the hypochondrium. A rounded very tender lump projected from the under surface of the liver below the ninth costal cartilage and extended to the level of the umbilicus. It appeared to be the gall bladder, and biliary calculus was suspected. The right kidney was freely mobile, but no special importance was attached to this fact. On Feb. 20 the abdomen was opened in the right linea semilunaris, and the supposed gall bladder found to be a firm tongue-like process of the liver which projected forwards and downwards. The colon and duodenum were bound to the under surface of the liver by old and recent adhesions. These were dissected off, and a thick lump, the shrunken gall bladder, was exposed. Below this the right kidney presented. After the gall bladder was isolated, a matter of considerable difficulty, search was made for a calculus, but none existed. The cavity of the gall bladder was almost obliterated, and its only contents were pus and lymph. The wall was over half an inch thick. It was impossible to bring it to the surface, so the general peritoneal cavity was shut off by sewing the great omentum to the lower margin of the wound, and provision made for drainage. Thus suppurative cholecystitis without gall stone, and floating kidney were present. Nephropexy was indicated, but for several reasons it was deferred. A fortnight later the usual incision was made in the loin, and the kidney, which was small, fixed with 3 kangaroo-tendon stitches. The patient's health improved greatly, and the pain disappeared.

CASE 2.—A married woman, aged 28, who had 3 children, came under care on Feb. 1,

1901, with jaundice, which lasted for one month. She had long suffered from pain in the region of the liver, which was always worse on movement. Vomiting had been frequent for a longer period, and she had lost much weight, having weighed 12 stone when 17, and being only 7 stone now. Constipation was habitual, the motions were clay-coloured, and there was choluria. When she lay supine a rounded lump was felt below the liver. This was thought to be a tense gall bladder, but proved on operation to be the right kidney, which floated freely and was in contact with the anterior abdominal wall. The gall bladder and cystic duct were normal. The right kidney was fixed in place by 3 kangaroo-tendon sutures introduced through a lumbar incision. Bile pigment disappeared from the urine in 10 days, and the stools regained their normal colour. The jaundice disappeared in a month. The general condition has greatly improved during the last 6 months.

These cases and others show the importance of floating kidney as a cause of jaundice and hepatic symptoms. It is useless to treat supposed errors of diet or hepatic disorder when the cause of the symptoms is floating right kidney, which is amenable only to operation. Further, if a floating kidney can obstruct the escape of bile, it may be an indirect cause of gall stones.

As to the mechanism of the obstruction, Mr. Henry Morris states that floating kidney does not press directly upon the bile duct ("REVIEW," p. 12). The normal right kidney is closely connected with the second part of the duodenum, which rests on it. The pelvis of the kidney is on the same level and a little outside the orifice of the common bile duct. The lower end of the kidney is situated about the level of the duodenum. It is improbable that the right

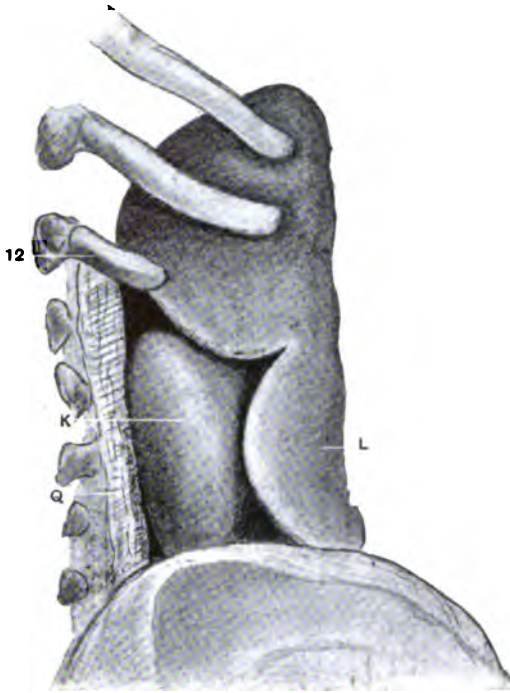


FIG. 1.—Exact position of displaced liver and kidney to the skeleton (nephro- and hepato-ptosis).

12, The last rib; K, the R. kidney; L, the liver with Riedel's lobe; Q, the quadratus lumborum muscle.

kidney ever floats forwards and inwards without somewhat affecting the position of of the duodenum. Similarly, downward displacement of the right kidney by corset pressure also involves displacement of the duodenum. Fig. 1 is taken from a dissection made by Dr. A. Keith, Curator of the London Hospital Museum, after the viscera had been hardened *in situ*. As the result of corset pressure both the liver and kidney have been displaced downwards. The upper end of the kidney lies well below the twelfth rib, its lower end is in the iliac fossa, the hilum with the entrance of the renal vessels has descended to the level of the third lumbar vertebra. The liver has become vertical and much elongated—a tongue-like lobe reaching down to the iliac crest. Such displacement must

greatly alter the position of the gall bladder and duodenum. Fig. 2, made from another dissection by Dr. Keith, shows that this is the fact. The viscera are seen from the median aspect. The axis of the gall bladder has become almost vertical, and forms with that of the common bile duct an angle of only some 20° . The third part of the duodenum has been so much displaced that it rests on the common iliac artery, and the orifice of the bile duct is at least one vertebra lower than normal. Such kinking of the cystic duct must greatly impede the escape of bile from the gall-bladder and favour the formation of

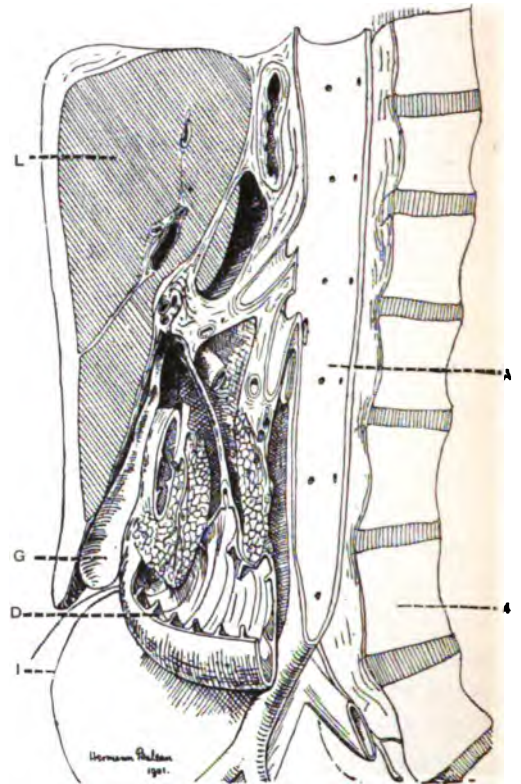


FIG. 2.—Section made obliquely downwards in another subject with nephro- and hepato-ptosis, to show the displacement of the duodenum and sharp bend of the bile ducts.

L, the liver; A, the aorta slit open; G, the gall-bladder; I, iliac bone; D, duodenum; 4, the fourth lumbar vertebra.

gall stones or the occurrence of cholecystitis.

In the first case now reported there was evidence of the previous compression of the liver by the formation of a tongue-like abnormal lobe. There are thus the following factors to explain the occurrence of obstructive jaundice with floating kidney—(1) downward displacement of the third part of the duodenum, with stretching of the common bile duct; (2) displacement of the gall bladder, and sharp kinking of the cystic duct; (3) torsion of the vertical part of the duodenum and perhaps even of the bile duct.

In cases of floating right kidney gastrointestinal symptoms are frequent. Sometimes gastric ulcer or even carcinoma is suspected. In one such case the patient had been under medical treatment for a considerable time for suspected gastric ulcer before a freely floating kidney was detected. After nephropexy the gastric symptoms disappeared, and 2 years later the patient was well.

ARCHIVES GÉNÉRALES DE MÉDECINE, Jan.,
p. 14.

Uræmic Ulceration of the Stomach and Small Intestine.

By ALBERT MATHIEU AND JEAN-CH. ROUX.

A girl, aged 22, had been under the care of M. Achard for chronic nephritis. There were buccal hæmorrhage, œdema, and the usual symptoms of nephritis. A week before admission to hospital she complained of abdominal pain and a little diarrhœa.

When admitted she was wasted, pale, and cyanosed round the lips, and had marked dyspnoea. In many ways she resembled a patient in the last stage of phthisis. The same evening she complained of diffuse pain in the abdomen. On palpation the greatest tenderness was in the

right iliac fossa, but there was none at McBurney's point. These pains continued for some days, and abdominal examination was difficult on account of resistance, especially on the right side. The bowels had not acted for 8 days. There were intense headache, contracted pupils, and marked dyspnoea. Examination of the lungs revealed nothing abnormal. The heart was enlarged and there was reduplication at the apex. The urine contained much albumin. The patient died the day after admission.

NECROPSY.—The left kidney was of average size and granular, and the capsule was closely adherent. The right was very small (weighing only 5 gm.) lobulated and cystic. The heart was hypertrophied and weighed 15 oz. The left ventricle was especially thickened. There was no valvular lesion. The pericardium was opaque and rough, and contained a slight excess of blood-stained fluid. The left pleural cavity contained similar fluid. The left lung was much congested and the right was adherent. The stomach showed 6 ulcers on the mucous surface (Fig. 1); the largest was situated on the lesser curvature at about one-third of the distance between the cardiac and pyloric orifices. It had a punched-out appearance the margins being slightly raised. It was irregularly oval, the greatest diameter being 4 cm., the smallest 3 cm. The base shewed 2 distinct zones. A central of yellowish colour and somewhat deeper was formed by the peritonium as base, the yellow colour being due to peritoneal fat. Outside this was a whitish-grey zone formed by the remnants of muscular tissue and inflammatory infiltration. The remaining ulcers were smaller and shallower, the largest being of the size of a 20-centime piece. The others were considerably smaller, 2 being almost punctiform, and 2 others about the size of a lentil. The base of one of the latter was

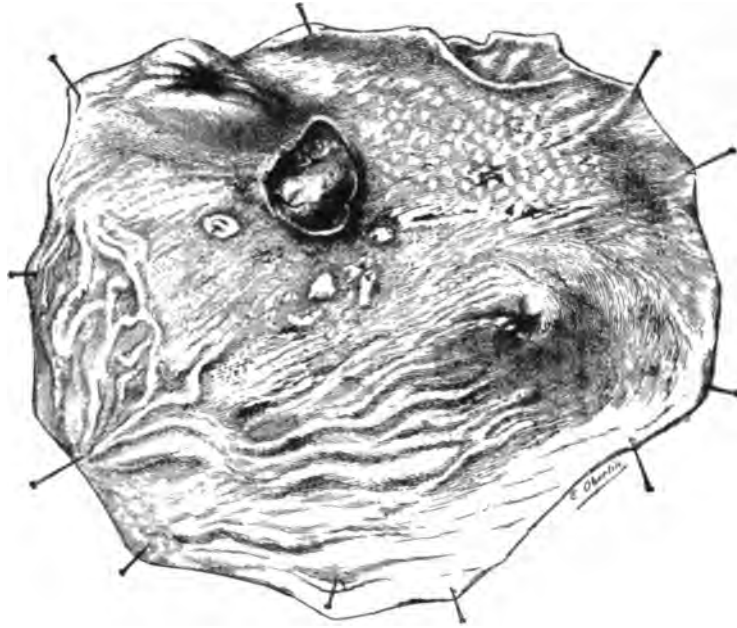


FIG. 1.—Gastric ulcers.

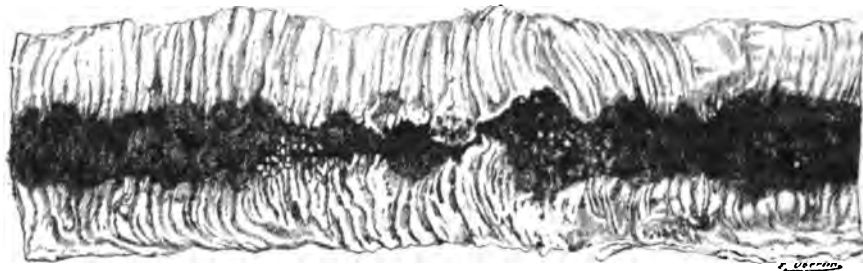


FIG. 2.—Intestinal ulcers.

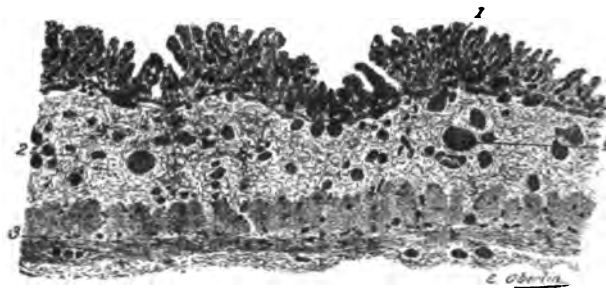


FIG. 3.—Section of intestine in the neighbourhood of ulcers.

1. Mucous membrane. 2. Submucous coat. 3. Muscular coat. 4. Dilated vein.

covered by an adherent slough. The upper part of the small intestine on the peritoneal surface shewed nothing abnormal. The lower part was very congested and presented a dark violet appearance, which became more marked and pronounced towards the cæcum. On being opened an elongated strip of ulceration was found extending from a point 4 or 5 cm. from the ilio-cæcal valve for a distance of 75 cm. (Fig. 2). This showed a white exudate of diphtheritic appearance forming an elevation above the surface of the adjacent mucous membrane. This tract was due to the more or less complete union of oval patches. In the neighbourhood of the cæcal valve this end-to-end junction was complete, while higher up it was interrupted. The greatest width of each patch was 15 to 20 mm., while the length varied from 2 to 6 cm. The whole ulcerated surface presented an irregularly sinuous outline, owing to the junction of the oval patches. In some places the ulcerated areas did not show any diphtheritic deposit but there was marked loss of substance. Outside these ulcers the intestine was in patches very congested and livid. The large intestine was unfortunately not examined. The liver was not increased in size, but was fatty and of "nutmeg" appearance.

MICROSCOPIC EXAMINATION.—In passing from the border of the intestinal ulcers to the centre were 3 successive zones—the mucous membrane thinned but otherwise intact, mucous membrane superficially ulcerated, and the ulcerated surface from which the mucosa had completely disappeared. The glandular and interstitial elements stained badly owing to post mortem change. There was some embryonic infiltration in the interstitial spaces. The tubular glands had disappeared and the submucous layer was somewhat thickened over the whole field, but especially in the area of ulceration. In

fact it was this increase in thickness of the submucosa that gave rise to the appearance of swelling seen by the naked eye. The vessels in this coat were much dilated, and there seemed to be serous infiltration. Thus the swelling of the submucous layer appeared to be due not to tissue change but to a mechanical cause. This vascular dilatation attained its maximum in the immediate neighbourhood of ulcers. At this part all traces of mucosa had disappeared leaving the congested submucous layer as described. The extreme base of the ulcer was coated by a thin layer of indistinct fibrils heaped one on another, among which no cellular element could be seen. This felt-like deposit stained deeply with hæmatoxylin. It seemed to consist of connective tissue debris undergoing necrosis, and was probably the surface from which a slough had been cast. Sections of the intestine at some distance from the ulcers shewed chronic enteritis, and some of the glands cystic dilatation.

Sections taken from the similar gastric ulcers shewed analogous conditions. The mucous membrane had completely disappeared, and the base of the ulcer was covered by a granular deposit. In this instance the ulceration had not extended beyond the muscularis mucosa. In the immediate neighbourhood of the ulcer was marked thickening of the submucous coat from enormous dilatation of the veins and capillaries forming a cavernous-like tissue. The deeper ulcers shewed loss of substance down to the muscular layer. Sections from other portions of the stomach revealed chronic gastritis. At some distance from the ulcers the thickening of the interglandular spaces was marked, especially in sections taken from the greater curvature, and at some considerable distance from the pylorus no more glandular tissue could be found. The atrophic tubular glands shewed absence of

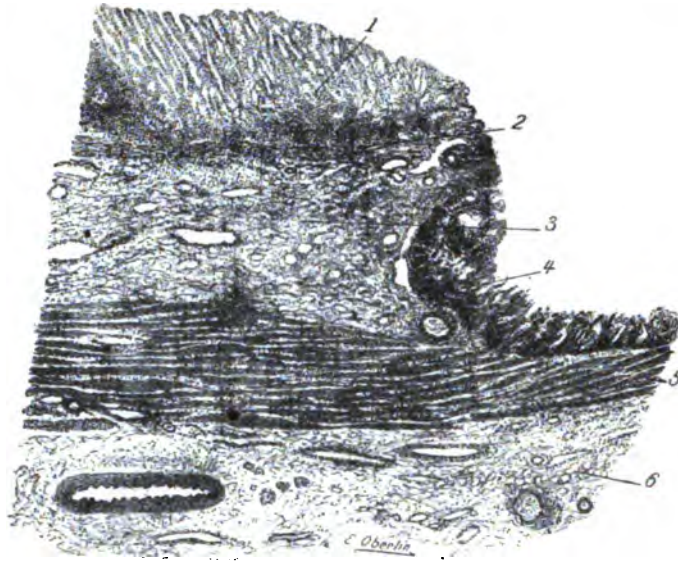


FIG. 4.—Section of the large gastric ulcer.

- | | | | |
|---------------------|-----------------------|----------------------|-----------------------------------|
| 1. Mucous membrane. | 2. Muscularis mucosæ. | 3. Cellular tissue. | 4. Granular surface of the ulcer. |
| | 5. Muscular coat. | 6. Subserous tissue. | |

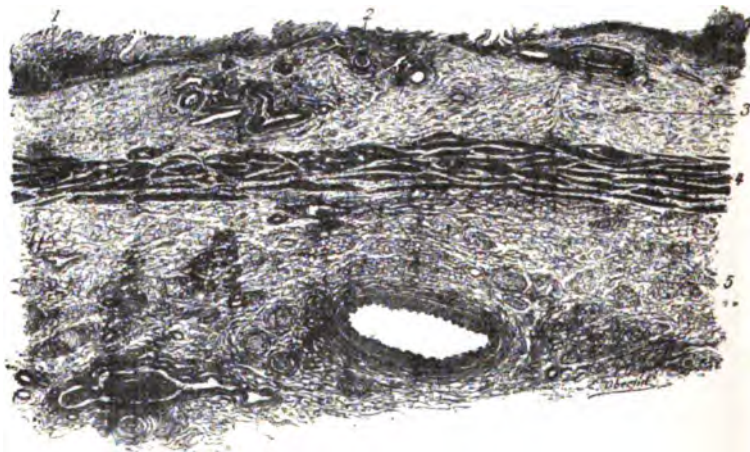


FIG. 5.—Section of one of the small gastric ulcers.

- | | | | |
|---------------------|-----------------------|---------------------|-------------------|
| 1. Mucous membrane. | 2. Muscularis mucosæ. | 3. Cellular tissue. | 4. Muscular coat. |
| | 5. Subserous tissue. | | |

principal and parietal cells. They were lined by cylindrical atrophic epithelium. A section taken from the largest ulcer shewed the changes characteristic of simple gastric ulcer, the margin being terraced, the surrounding mucosa thickened and raised as a sort of collar. Below this the submucous layer was considerably thickened and formed the greater portion of the ulcerated surface. Deeper still the longitudinal fibres appeared raised in the floor of the ulcer and obliquely cut across so as to leave exposed the peritoneal and sub-peritoneal coats. The subserous coat was thickened and showed dilatation of the vessels and some small particles of fatty tissue. Beneath the swollen mucous membrane at the margin of the ulcer was a thin layer of irregular cellular elements and glandular debris, and the muscular coats shewed some interstitial infiltration. In the thickened mucous membrane the glands appear elongated and contained distinct marginal cells, the chief cells having disappeared.

Gastro-intestinal ulceration is uncommon in Bright's disease. In the cases described the patients were from 18 to 25 years of age. The most frequent symptom is intense and persistent diarrhoea, which, when the lesions extend to the lower part of the large intestine, may be dysenteric. Constipation, as in the case now recorded, is unusual. When it occurs it lasts only a short time and is followed by diarrhoea. Pain is not a common symptom unless the peritoneum is involved. Vomiting seems to be due to the general toxic condition rather than to the intestinal lesion. The cases are usually fatal in 2 to 4 weeks, but death has occurred from some other complication, and the necropsy has shewn old scars, pointing to previous ulceration. Diagnosis may be difficult, as a patient suffering from Bright's disease

may have diarrhoea without intestinal ulceration. Even intestinal hæmorrhage cannot be held as pathognomonic. In a case of melæna, the intestine on examination was found intact. The only lesion present in the alimentary system being some hæmorrhagic erosion of the gastric mucous membrane. Ulcers of the large intestine are very variable in characters: they are sometimes very diffuse, sometimes punched-out, and sometimes superficial. When ulceration is marked in the small intestine the large seems to escape. Sometimes only the cæcum shows a slight ulceration. When the small intestine is ulcerated it is usually the lower ileum which is affected, and as in the cases described above the ulcers are elongated and occupy the portion of the bowel opposite the mesentery. They may, however, be transverse. They vary in depth and may have a punched-out appearance.

See also "REVIEW," Vol. IV., p. 525

MÜNCH. MED. WOCH., Jan. 7, p. 10.

Artificial Tendons.

By DR. FRITZ LANGE.

In tendon-transplantation for paralysis the method of suturing the functionally active transplanted tendon to the periosteum (the writer's "periosteal tendon-transplantation)," instead of to the tendon of the paralysed muscles has certain advantages. There is no danger of the long-disused and atrophied tendon becoming stretched and useless, and the transplanted tendon can be fixed in the exact position most suitable for the correction of the deformity. For instance, if the extensor longus digitorum pedis is paralysed, the tibialis anticus may be split and the new muscle thus obtained sutured either to the

periosteum over the cuboid bone (the writer's method) or to the tendon of the paralysed extensor ("old" method). (See also "REVIEW," Vol. III., p. 652, and Figs. 3 and 5, p. 654.) The only obstacle to the general application of the method was that the tendons of many muscles were too short to be implanted into the periosteum. The writer now prolongs tendons to any required length by silk cords. He first employed this method in a case of paralysis of the quadriceps femoris. Previously attempts had been made at correction by suturing the sartorius to the quadriceps tendon, but with unsatisfactory results. If the semitendinosus and biceps were freed from their insertions and brought forwards under the skin, the conjoined ends were situated above the patella and it was impossible to suture them directly to the tibia. A serviceable silk tendon was produced, however, by the passage of a number of strong silk threads through the tendinous ends of the transplanted muscles above and the periosteum of the tubercle of the tibia below (Fig. 1), giving excellent power of extension. Dr. Lange originally employed silk tendons only when the shortness of the muscles

rendered them necessary. He now uses them also in cases in which the tendon to be transplanted appears thin and liable to necrosis if subjected to much tension. To obtain the best functional results the transplanted muscle cannot be too tightly stretched. But tension is most injurious to the vitality of transplanted tendons. Hence it is often best to make an entirely new silken tendon instead of splitting the tendon of the muscle. For example, if the peronei and the extensor longus digitorum pedis are paralysed, but the tendon of the tibialis anticus appears too thin and weak to be successfully divided and transplanted, it is only necessary to pass 2 strong silk cords through the tendon of the tibialis anticus above the anterior annular ligament and to fix the 4 ends of silk to the periosteum of the cuboid. A new tendon is made and division of the tibialis anticus is obviated.

Dr. Lange has employed silken tendons in 56 cases of tendon-transplantation, in all of which healing by first intention was obtained. In only 2 was the result unsatisfactory. In a girl, aged 10, all the muscles in the leg were paralysed with the exception of the gastrocnemius, with consequent talipes equinus. To correct this the inner and outer thirds of the tendo Achillis were freed, brought forwards, and fixed respectively to the scaphoid and cuboid bones by silk cords. To keep the foot in a good position great tension was required, and the skin was consequently raised in folds by the artificial tendons. After the plaster of Paris was removed it was found that the silk had cut its way out and the skin had reunited underneath by first intention (Fig. 2). This accident probably might have been averted if a window had been made in the plaster over the tense threads. In a similar case the silk cut through the raised fold of skin 3 months

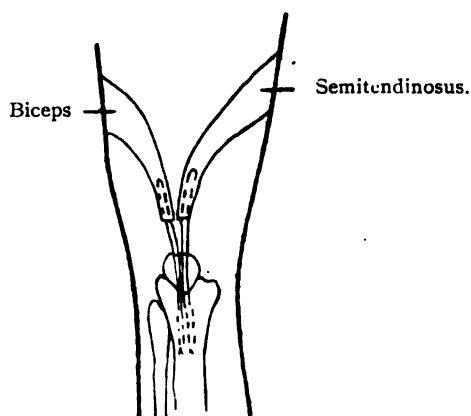


FIG. 1.

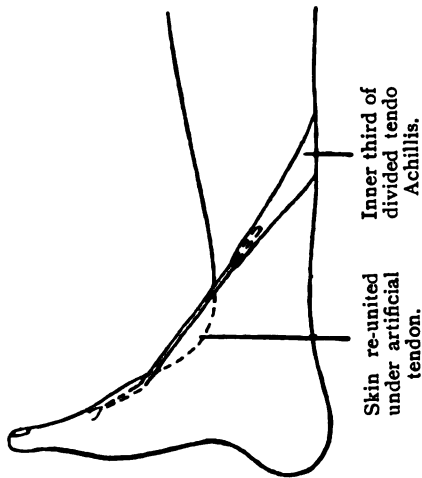


FIG. 2.

after the operation on the first occasion on which laced boots were worn. There was no suppuration. A pad of cotton-wool fixed inside the boot might have prevented the accident. These 56 cases prove the following:—

(1) Even long strands of silk may be left as substitutes for tendons without the production of suppuration. Several of the writer's artificial tendons were 8 in. long.

(2) The functional results are excellent. Patients in whom the semitendinosus and biceps were made to replace the quadriceps femoris often obtained almost normal powers of extension.

(3) The silken tendons are very durable. When the plaster-of-Paris is removed 2 or 3 months after the operation the artificial tendon is of its original thickness. When, however, the transplanted muscles begin to act, and render the silk constantly taut, the cord steadily increases in thickness. Thus in one case 6 months after the operation the artificial tendon was of the size of the pencil of a pocket-book, in another, 12 months after the operation there was a "tendon"

as large as an ordinary lead pencil, and in a third, 2 years after the operation the "tendon" was of the size of the little finger. That this increase was due to a new formation of fibrous tissue round the silk was probable from the clinical course. The writer has lately proved that this occurs. In a girl, in whom a "tendon" made $2\frac{1}{2}$ years before for quadriceps paralysis proved too long, an incision was made below the patella in order to shorten it. The "tendon" was easily found in the subcutaneous connective tissue. It was surrounded by a loose and movable layer of connective tissue, but there was no true tendon sheath. The "tendon" had the appearance of a bluish-white, tough, fibrous cord of the size of a large lead pencil; below it was continuous with the periosteum over the tibia. This sheath was 2 to 3 mm. in thickness and enclosed the silk cords, which appeared to be as sound as ever. Microscopic examination of an excised piece of the newly formed sheath showed that in the deeper and therefore older layers next the silk the structure was identical with that of a normal tendon (Fig. 3). In the superficial layers the structure was also tendinous but with the addition of scattered vessels and fat cells.

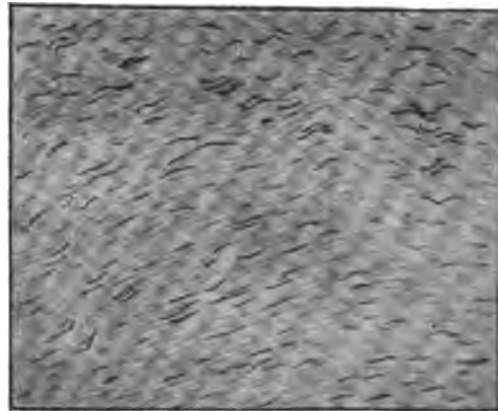


FIG. 3.

(4) Silken cords are less liable to form adhesions than divided and transplanted tendons.

TECHNIQUE.—The silk employed is that known as No. 12 ; before use it is boiled for 10 minutes in 1 in 1000 solution of perchloride of mercury. The limb is placed in plaster-of-Paris immediately after the operation, but a small window is made over the wound to allow of the removal of a gauze drain within 48 hours, and of the skin sutures within 8 or 12 days. The patient is allowed to get up 4 weeks after the operation, and the plaster is removed after 8 to 12 weeks.

LANCET, March 8, p. 653.

Intestinal Sand.

By SIR DYCE DUCKWORTH, M.D., LL.D.,
F.R.C.P.

AND

ARCHIBALD E. GARROD, M.A., M.D., F.R.C.P.

Cases of intestinal sand appear to be of singular infrequency in the British Isles, for it is scarcely possible that they are often overlooked. English literature on the subject is almost a blank, and the text-books of this country and the United States make but little reference to it. A good many cases have been observed on the continent.

A married lady, aged 33, began to suffer from diarrhœa in Jan., 1900. The drinking water was hard and contained organic impurities. Her father and his brother and sister were gouty. The patient had 5 sisters and 2 brothers ; one of the latter suffered from colic. Bowel disorders were said to be prevalent in the family. The patient suffered occasionally for about 18 months from eczema around the anus. When this yielded to treatment she became subject

to looseness of the bowels, having previously been of constipated habit. The diarrhœa was intractable, and accompanied by internal rumbling and purring noises, there being 6 or 8 loose motions in the 24 hours. In the middle of Feb. she took to bed, and was given exclusively milk diet with lime-water. The diarrhœa lessened to 3 or 4 motions daily, sometimes attended with the passage of mucus. Sand was discovered in the motions on March 18, and found subsequently in all in which it was looked for. Treatment did not check the diarrhœa or the formation of sand. In April, 2 or 3 motions were passed daily. They were loose and brown, and on tilting the bed-pan the gritty sand could be seen at the bottom, each motion containing about a teaspoonful. Early in May the patient was pallid and sparsely nourished. The colon and sigmoid flexure were, though empty, too readily palpable, and apparently thickened. The right kidney was movable. There was slight pyrexia at this period, the temperature rising occasionally to 100°, or a little higher. The sand was reddish-brown and resembled a deposit of uric acid finely gritty. It was insoluble in cold and boiling liquor potassæ and readily soluble in boiling nitric acid. Under a low power of the microscope were seen translucent particles of various shapes and sizes and of a brilliant reddish-brown hue.

The patient was confined to bed and kept on milk diet. Salicylate of bismuth and bicarbonate of sodium were given in mixture. Under this treatment the diarrhœa was somewhat checked and the general health improved. The motions were rather more consistent and stained by the bismuth, but still contained sand. Towards the end of May the patient took short walks, but complained for the first time of pain in the large bowel. Chicken

broth, turtle soup, mutton broth, and koumiss were now given, and a mixture containing carbonate of bismuth, opium, and tincture of cinnamon. There was gradual improvement, but much rumbling noise occurred in the bowels. Some benefit was gained by taking bael jelly and also from a mixture containing aromatic sulphuric acid, tincture of cinnamon, and opium. In July she went to Plombières and was under the care of Dr. Bottentuit. She took baths and rectal douches and drank the water in small quantities. Bicarbonate of sodium in teaspoonful doses was given with advantage for the flatulent attacks. All vegetable food was withheld, and digestion was found to be much more comfortable without it, as it caused immediate distension. She lost 10 lb. while at Plombières. On returning home she reported herself much better. Her general health and her nervous tone had improved. There were still diarrhoea, much flatulence at intervals, and some, though less, sand, and much mucus. The appetite was better and a greater variety of food could be borne. During Oct. there were alternations of constipation and diarrhoea. In Nov. she was rather pallid and languid, but had regained her usual weight. The large bowel no longer appeared thickened, but there was tenderness about the splenic flexure. There was still looseness of the bowels, from 2 to 4 actions occurring daily, but no sand was passed. The diet was confined to animal food. The urine was turbid with lithates and deposited uric acid. The tongue was large, flabby, and thinly grooved. A mixture containing liquid extracts of cinchona, bael, and tincture of cinnamon, was ordered, and milk with natural seltzer water was added to the diet.

This case presents most of the characters of the disorder. It is, however, remarkable for

the slightness of the pain. In most cases of enteric lithiasis this appears to be a marked feature, occurring in paroxysms lasting several hours, somewhat akin to those associated with biliary and renal colic and attended with much flatulent distension and vomiting. According to M. Dieulafoy, who has recorded a series of these cases, there is commonly a family history of gout, and he regards the condition as one of the irregular manifestations of this disorder. In this case there was a distinct gouty history on the father's side. In a large proportion of the recorded cases the co-existence of muco-colitis has been observed often with passage of casts and shreds. Diarrhoea occurs in some cases, constipation in others. The subjects of the disorder in two-thirds of the cases have been women, and the average age was about 35 years. Cases have been recorded in children under 4.

CHARACTERS OF THE INTESTINAL SAND.—When washed and dried in the air the gritty material appeared like fine sand. Its ground colour was a deep brown with an admixture of pale or almost colourless particles. Under a low power of the microscope the individual granules were of a great variety of shapes: some were roughly oval, some oblong or even rod like, and others of irregular outline. Their colour varied from yellow to a warm brown. Some were translucent and others opaque, with the exception of their edges. Some had a finely granular appearance, but none showed any indication of crystalline structure. Their longest measurement varied between 0.05 and 0.02 mm. When treated with an acid beneath a cover-glass the particles became surrounded by groups of bubbles and the solution of the inorganic constituents left exposed an organic structureless brown basis, soluble in alkalis.

No cellular elements could be seen and the organic basis certainly did not consist of vegetable débris. As in Eichhorst's case, the organic material, when washed with distilled water and stained with methylene blue, was seen to be rich in bacilli and micrococci. When the organic material was removed by combustion, the particles of inorganic substance left appeared like decolorised shadows of the original granules, which they resembled in shape and size. At 100°C. the air-dried sand lost considerably in weight, owing to the expulsion of water, and the percentages contained in it were, water, 12·40; organic material, 26·29; inorganic material, 61·31. The inorganic residue left after combustion over a Bunsen's burner had a bluish-white tint and contained only a few dark particles. With the exception of such particles it was completely soluble in hydrochloric acid. This residue had the following composition:—calcium oxide (CaO), 54·98; phosphorous pentoxide P_2O_5 , 42·35; carbon dioxide (CO_2), 2·20; residue, containing traces of magnesium and iron, 0·47. Calcium phosphate was clearly the chief mineral constituent. Among the colouring matters present was a small quantity of unaltered bile-pigment. Berlioz mentions the presence of urobilin in one of Dieulafoy's specimens, and Eichhorst observed biliverdin in some granules of the sand; but the only recorded case in which a special investigation of the contained pigments has been carried out is that of Dr. R. S. Thomson and Dr. A. R. Ferguson, who found, in addition to some urobilin, a pigment soluble in dilute hydrochloric acid and in alkalies but insoluble in water, alcohol, ether, and chloroform, and which was obviously not one of the recognised biliary pigments (*Jour. of Pathol. and Bacter.*, 1900, vi., p. 334).

VARIETIES OF INTESTINAL SAND.—

Although the literature of intestinal sand is scanty, two distinct classes of material have been described, which may be termed *true* and *false* sand, respectively.

1.—*False* intestinal sand is composed of remains of vegetable foods which have resisted the action of the digestive fluids, and which may or may not have acquired some incrustation of earthy salts. One kind of vegetable débris is especially apt to appear as a sand-like material in the motions, the sclerenchymatous particles which are so abundant in pears. The occurrence of such sand in the motions was described by C. Robin in 1873, and some at least of the specimens described by Laboulbène in the same year were obviously of this nature. Eichhorst described a case in 1889, and Fürbringer called special attention to this material as simulating biliary concretions. Naunyn also refers to it as one of the varieties of so-called "biliary sand." A description of "pear sand" was published in 1817, by Dr. Alexander Marcet, in his "Essay on Calculous Disorders," p. 132. In this country specimens have been brought before the Pathol. Soc., by Dr. S. Delépine and Mr. S. G. Shattock. A specimen of pear sand, for which the writers are indebted to Dr. J. H. Drysdale, is paler in colour and more coarsely granular (from 0·3 to 0·6 mm.) than that passed by their patient, and when burnt left only 1·76 per cent. of inorganic residue. Other observers obtained from 2 to 3 per cent. of such residue—figures which contrast sharply with the much higher percentage of mineral constituents in specimens of true intestinal sand. The microscopic appearance of *pear* sand is very characteristic. Under a low power the granules appear as if studded with projecting crystals, and after removal of any inorganic

incrustation by an acid they are seen to be composed of woody cells, the thick, transparent walls of which are traversed by channels running from the narrow cell cavities towards the surface. In a word, the granules are easily recognised as identical with the particles of sclerenchymatous tissue in the fruit from which they are derived, and of which the patient will be found to have partaken freely. There is reason to believe that these woody particles may remain for some time in the intestine, and the expulsion of large accumulations of them may be preceded by severe colicky pain. The presence of a black sand-like material in the motions, consisting of cells derived from the banana, has also been described by some American writers. The dark colour is apparently acquired during the passage of the cells along the alimentary canal.

2.—*True* intestinal sand, on the other hand, of which the material passed in the present case is an example, has no such vegetable basis, and wanting such a rigid skeleton it owes its hardness and grittiness to the much larger proportion of inorganic material which it contains. The organic basis of such sand is clearly of animal origin. Some of the published analyses of such materials show a close resemblance to that of the writers' specimen. Thus Mathieu and Richaud analysed the sand passed by their two patients with the following results:—

CASE 1.—Organic material, 30·800; tricalcic phosphate, 64·206; calcic carbonate, 3·418; various mineral substances, 1·576.

CASE 2.—Organic material, 45·80; tricalcic phosphate, 46·68; calcic carbonate, 5·14; various mineral substances, 2·38.

Dr. Thomson and Dr. Ferguson's specimen had the following composition:—Organic matter, 28·5; inorganic matter, 71·5. In the

organic residue—calcic carbonate, 11·7; tricalcic phosphate, 87·3; insoluble residue (silica) 1·0.

Berlitz, in one of Dieulafoy's specimens obtained water, 11·25; nitrogenous organic material of fæcal origin, 22·24; fatty substances, traces; phosphoric acid, 17·56; lime, 26·22; magnesia, 14·05; silica, 8·68.

In some other cases the proportion of inorganic material has been considerably less. Thus Marquez found organic matter of animal origin, 72; inorganic, consisting of calcium phosphate and traces of carbonate, 28.

In a case recorded by Biaggi the sand was agglutinated into balls from 6 to 8 cm. in diameter, which readily disintegrated into sand. Much calcium phosphate was present, with traces of magnesium and sodium. The material passed in Mongour's case was *gravel* rather than *sand*, and occupies an intermediate place between intestinal sand and the large intestinal calculi which are sometimes seen, and which are usually composed, in large part, of ammonium magnesium phosphate. Most of the particles were about the size of an orange pip, but some attained to the dimensions of nuts. It contained 26·82 per cent. of magnesium phosphate and 43·90 of calcium carbonate.

SEAT OF FORMATION OF "TRUE" INTESTINAL SAND.—The composition of the sand excludes a biliary origin, for it contains no cholesterin, and bile pigment is only present in traces. On the other hand, there is much that points to its origin in the intestinal tract. It is practically always found in association with intestinal disorders, usually with muco-membranous colitis. The characters of the organic basis and the large numbers of bacteria which are included in it point to the intestine as the probable seat of origin. The richness of the sand in the

writers' case in urobilin and poverty in unaltered bile-pigment suggest that it is formed in a region in which the conversion of the bile-pigment into urobilin is already far advanced. There is good reason to believe that the principal seat of this change is in the upper part of the colon. Concretions, chiefly composed of calcium phosphate and carbonate, can hardly be formed in any but alkaline surroundings; but there is so much doubt as to the reaction of the contents of different parts of the intestinal tract, especially under morbid conditions, that this does not afford clear indication of the exact locality. The nature of the inorganic constituents is fully compatible with an intestinal origin. Nor is it necessary to look to unabsorbed residues of the calcium of the food as the sole source of supply, for Voit, Friedrich Müller, and von Limberg have shown that a large part of the calcium excretion of the body is effected by the intestine, and Kobert and Koch found calcium, magnesium, and phosphoric acid in the material which accumulated in the empty and cleansed colon of a patient with a fæcal fistula. Like Dr. Thomson and Dr. Ferguson's patient, the writers' had taken milk and lime-water freely, and Bunge has shown that the amount of lime contained in milk is actually greater than that in an equal volume of lime-water.

ARCHIVES GÉNÉRALES DE MÉDECINES,

Nov. and Dec., p. 313-684.

**Progressive Cardiac Failure from Primary
Sub-Acute Myocarditis.**

By E. JOSSERAND and LOUIS GALLAVERDIN.

The writers have made a careful study of a well marked but unrecognised form of cardiac disease. The symptoms are as

follows:—A man, generally between 20 and 30, in good health, is seized more or less suddenly with difficulty of breathing, or with symptoms of embolism, cerebral or pulmonary. There may be repeated hæmoptysis, work may soon become impossible on account of dyspnœa, and the patient be obliged to take to bed. In other instances the onset is more gradual. For a month or longer the patient suffers from increasing debility which renders his occupation more or less trying. There are for some weeks cough and dyspnœa on the least exertion, loss of weight, and, possibly, diarrhœa. Hæmoptysis may then appear and be so abundant as to suggest pulmonary tuberculosis. Some pyrexia and progressive wasting support this diagnosis. Soon, however, symptoms of cardiac failure appear. Cardiac dyspnœa becomes more marked, preventing sleep as well as work. Œdema begins in different parts of the body. Notwithstanding rest, dietetic and medicinal treatment, the dropsy increases in extent; the thighs, abdomen, loins, upper limbs, and face may be invaded. The liver becomes enlarged, and the urine scanty, dark-coloured, and uratic. The lungs shew signs of œdema. There is marked orthopnœa. During all this time the hæmoptysis continues more or less. Early in the case albuminuria is discovered and some cases are diagnosed as nephritic. The progressive character of the disease is one of its most salient features. Once the patient takes to bed he never gets up again. In striking contrast to valvular disease not even youth and vigour prevent the insidious advance of the disease.

Physical examination reveals some curious facts. The pulse is strangely good, even within a few hours of death it may be regular, rarely shewing arhythmia or undue frequency.

The heart is hypertrophied. Sometimes it may be difficult to accurately define the apex beat but marked dilatation of the right ventricle, epigastric pulsation, and diffuse, vigorous impulse all point to considerable increase in size. In some cases the apex may be found in the 6th space far outside the nipple line. Auscultation shews no valvular lesion. A soft blowing murmur is heard at times but its characters are against its being organic. According to the writers a *bruit de galop* is a constant feature. A patient with marked oedema, hæmoptyses, progressive asphyxia, and a pulse that is either normal or slightly altered, and *bruit de galop*—such is the clinical picture of this condition, which progresses to a fatal end. The duration is from 4 to 18 months. Treatment seems unavailing and digitalis is useless; theobromine which is of considerable value in some cases of cardiac disease is of no use. Inhalations of oxygen and injections of morphia give some relief.

The diagnosis at first is very difficult. The progressive emaciation and hæmoptysis suggest phthisis, especially in the presence of apical râles and, possibly, of slight pleural friction. In one case typical pulmonary tuberculosis was diagnosed, until repeated examination demonstrated absence of bacilli. Similarly, nephritis may be diagnosed, but the s.g. of the urine remains high and there are no casts.

The conditions found post mortem are interesting. The liver is enlarged and fatty; the kidneys are congested, but have an easily separable capsule. They usually shew marked infarction. The pleural cavities contain some blood-stained fluid; the lungs are intensely congested and shew infarcts of various sizes. The heart is much enlarged, and may weigh from 17 to 19 oz. The left

ventricle always, and the right ventricle sometimes, contain much clot filling the lower third of the cavity. This clot is grey and granular and more or less adherent to the cardiac wall from which it is difficult to separate it. This parietal thrombosis is a characteristic feature. The ventricular wall beneath the clot shews fibrous changes to an extent corresponding to the area of the adherent clot. To the naked eye it presents a fibrous greyish appearance. It is resistant to the knife and when cut in slices shows variations in colour from brown to yellow. It is difficult to distinguish where endocardium ends and thrombus begins as the latter has become so intimately adherent to the ventricular wall. The area of sclerosis may be considerable and can always be estimated by the amount of thrombus. The first idea which presents itself is that this change is the result of cardiac infarction but the healthy condition of the valves, the freedom of the coronary arteries from lesion, the absence of any tendency to cardiac aneurism go to prove that the lesion is primary. It seems to be of inflammatory origin and to have developed independently either of endo- or peri-carditis—that is to say, it is primarily myocarditic. The lesion seems to involve the whole thickness of the myocardium from epi- to endo-cardium, and as soon as the latter becomes involved thrombosis results. Microscopic examination shows bands of fibrous tissue extending right through sections of the myocardium. These are so abundant that the muscle fibres seemed entirely obliterated or else appear in traces here and there or in the form of débris shewing pigmentation, all stages being recognised. A distinctive character of this lesion is the presence in the midst of these bands of small areas in a state of active inflammation

—young round cellular elements grouped together or infiltrating in irregular lines the recently formed connective tissue. These show that the condition is sub-acute. Usually the vessels shew little, if any, alteration. The coronary arteries are healthy, and careful examination of the most minute branches does not shew any lesion even in those in the thickness of the myocardium. There is neither endarteritis nor periarteritis, nor do the vessels seem to occupy the centre of any of the more active of the inflammatory areas. In the portions of the myocardium uninvaded by sclerosis the muscular fibres appear healthy, but in one case examined by the writers, muscular elements shewed a condition suggesting Zenker's degeneration. The appearances differ completely from those of ordinary myocarditis such as occur in renal disease or in arterio-sclerosis. The kidneys shew merely chronic congestion, there being no nephritis. One of the writers' cases ran its course in 4 months, and the heart weighed nearly 20 oz.; the naked-eye characters described above were not so marked, but the microscope shewed the changes found in other cases. In all probability there was not sufficient time for the production of marked fibrous changes.

As to the causation of this curious condition, the writers have found it only in males and young subjects. In no case was there a history of syphilis, rheumatism, or alcoholism. There was no evidence of any infectious disease. In fact, at the onset, all the patients were in good health. The writers conclude that the heart may be the seat of a primary interstitial myocarditis which varies in acuteness. The general characters of the cases strongly suggest some infection. Myocarditis may occur in syphilis, tuberculosis, and other specific diseases, but in these there

generally is some distinctive lesion in some other organ. In the condition described no evidence of bacillary infection could be obtained.

CASE 1.—A man, aged 25, came to hospital with ascites and marked œdema of the legs. There was no history of rheumatism, chorea, syphilis, or alcoholism. His illness began 8 months previously with dyspnœa, especially after exertion. There was almost continual diarrhœa. After 2 months he took to bed with marked œdema of the legs and loins. The ascites had increased and the urine was dark-coloured and uratic and contained albumin. The cardiac apex was in the 6th space nearly an inch outside the nipple line. There were a slight blowing apical systolic murmur and marked *bruit de galop*. The legs showed signs of congestion. On removal of 15 litres of fluid from the abdomen the liver was found to be much enlarged and the lower border sharp. The ascites recurred. The general condition became worse. He lost weight. There were finally hæmoptysis, collapse, and death. The necropsy shewed great enlargement of the liver with intense congestion. The kidneys were enlarged in less degree. On section they showed somewhat recent infarction. The lungs were congested and the pleuræ adherent; a large infarct was present in the lower part of the right lung. A branch of the pulmonary artery to this part shewed complete embolic obliteration. Both ventricles were extremely hypertrophied. The heart weighed 17 oz. There was no valvular lesion. In the lower part of the left ventricle were grey granular clots very adherent to the wall and extending between the muscular processes. The myocardium was firm and red except in the lower part of the left ventricle where it was striated

and hard. These changes were subjacent to the adherent clot and were due to marked myocarditis as proved microscopically.

CASE 2.—A man, aged 29, gave a history of only an attack of malaria. His general health had been good up to 3 months before his last illness, when he woke one night and found that he had lost the use of his left arm. Next day he was completely hemiplegic but retained all his faculties. The paralysis was not quite absolute, coarse movements being possible. The heart was enlarged to the left and the impulse heaving. There were no murmurs but the second sound was reduplicated and accentuated. The pulse was regular. He was admitted a second time with similar symptoms. On final admission there were œdema of the legs, pallor, and slight cyanosis of the lips. The cardiac impulse was 2 fingers-breath outside the nipple line. No murmurs could be detected; the lungs showed signs of marked congestion. In spite of treatment the œdema increased and cachexia became marked. There was a distinct *bruit de galop*. The necropsy shewed the same conditions as in Case 1.

The centrally situated nodules in a group may undergo involution and leave a darkly pigmented cicatricial depression. If the nodules are more discrete they are usually prominent and hemispherical. After a time similar nodules appear on the hands. Still later, nodules, single or in groups, are scattered over the arms and legs, the face and trunk; some of these may eventually atrophy. The hands and feet are, however, even in the later stages, always most affected, the skin between the nodules is thickened, and there is great disfigurement. The lymphatic glands are but slightly, if at all, enlarged. Finally, nodules appear on the mucous membrane of the larynx, trachea, stomach, and intestines, especially of the colon and rectum, and in the liver, lungs, and spleen. Death may be postponed for 6 to 8 years from the first appearance of nodules on the feet. The writer, during the last 6 years, has observed 10 cases of this rare disease in the dermatological clinic in Palermo.

CASE 1.—A man, aged 32, noticed a nodule on the back of the right hand. This disappeared after cauterisation. Soon similar nodules appeared in the neighbourhood, and were followed by others over the left elbow, and anterior surface of the right thigh. A year after the appearance of the first nodule, on Dec. 5, 1894, the right thigh was covered with bluish-red, spherical tumours, but the only other nodules present were some on the fourth left finger and 2 on the left fore-arm. These were brown. Up to 1899 the tumours on the thigh were removed on several occasions, but fresh nodules invariably appeared. The thigh was always the most affected region, and the process spread thence to the nates and the trunk as far as the thorax. The typical localisation on the hands and feet was, therefore, wanting. The

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Multiple Sarcomata of the Skin.

By DR. L. PHILIPPSON.

In 1872 Kaposi described a form of sarcoma peculiar to the skin under the name of *sarcoma idiopathicum cutis*. He stated that without apparent cause brownish or bluish-red nodules varying from the size of a millet seed to that of a hazel nut appear on the soles and backs of the feet. They are smooth, tough, or elastic, or resemble cavernous angiomas. They are never confluent, but may appear in groups. In the latter case their surface is usually flattened.

more recent nodules also lacked the bluish tint usually present, because they consisted entirely of spindle cells and there was no new formation of capillaries.

CASE 2.—A man, aged 70, noticed a painless redness and swelling of the back of the right hand in Feb., 1896. On May 9 there was considerable œdema of the whole of the right hand, with irregularly shaped collections of clear or blood-stained lymph in the skin of the palm, the anterior surface of the wrist, the sides of the fingers, and the right forearm, as in lymphangioma. An epitrochlear lymphatic gland was enlarged and painful. Similar, but less numerous patches were present on the left hand and dorsal surface of the feet. Fresh patches appeared from time to time, and some months later there were bluish, hard, movable nodules of the size of a pea in the subcutaneous tissue of the forearms and soles of the feet, which had a sarcomatous structure. In July, 1897, they had enlarged somewhat, and there were 4 bluish indurations in the subcutaneous tissue of the left thigh, and one on the inner part of the right. The patient suffered from epigastric pain in Feb., 1897; the liver projected below the ribs in July, and there was progressive emaciation in Oct. Death occurred on May 8, 1898. The cutaneous condition was practically unaltered. Post mortem carcinoma of the liver was found with metastases in several organs, but there were no internal sarcomatous changes. The chief points in this case are the primary swelling of the hand, the formation of lymphangiomata, the slight extent of the otherwise typical sarcomatous changes, and the concurrent carcinoma.

CASE 3.—A man, aged 58, entered hospital Dec. 21, 1898. The feet and legs had swollen painlessly, and nodules had appeared on them in 1897. During 1898 similar cutaneous nodules

appeared on the hands and near the right eye. On admission there were a typical, bluish, hard sarcomatous nodule on the right lower eyelid, and several scattered red areas on the hard palate. In the right hand were dilated cutaneous lymphatics on the sides of the fingers, bluish discolourations on the palm and wrist, and hard bluish nodules scattered diffusely. In the subcutaneous tissue of the inner surface of the forearms were several small, hard, movable nodules. On the left hand there was diffuse œdema with similar changes to those on the right, and on the left wrist a nodule of the size of a hazel nut. There were diffuse redness and swelling of the left elbow. Several enlarged glands were present in the left axilla. The feet and lower thirds of the legs were swollen and covered with nodules. On the back of the thighs were nodules and discoloured patches. The inguinal glands were greatly enlarged, but not adherent. There were also subcutaneous nodules on the abdomen, the right side of the thorax, and back. In Dec., 1899, emaciation and asthenia were present, and nodules appeared in the left conjunctiva, left tonsil, and soft palate. Death occurred on March 27, 1900. There was a number of white and red nodules under the gastric mucosa, and of red nodules on the peritoneum. There were also white and red nodules, some of which were ulcerated, in the large intestine, one pale nodule in the appendix, and one in the spleen. The left suprarenal body was adherent to a mass of enlarged sarcomatous retroperitoneal glands. There was a red nodule in the right testicle, and the mesenteric glands were sarcomatous. In this case also swelling of the feet was an early symptom, and lymphangiomata appeared. The varying colours of the growths depended on whether a new formation of

capillaries or a proliferation of spindle cells predominated.

CASE 4.—A man, aged 53, admitted to hospital April 4, 1898, noticed a nodule on the lobule of the right ear in 1894. This disappeared after attaining the size of a bean. In 1895 the feet became œdematous and covered with nodules which also gradually disappeared. In 1897 there were œdema of, and nodules on the left hand. These changes spread to the left arm, which on admission was enormously enlarged from œdema and diffuse cutaneous sarcomatous infiltration. Every stage was represented, from red discoloured areas to intracutaneous indurations, sessile reddish-blue nodules, and cicatricial atrophy and contraction. The right hand was slightly œdematous, and bore 3 typical nodules. Two epithrochlear glands were enlarged. On the lower limbs the number of nodules increased from above downwards. The soles of the feet were œdematous and covered with diffuse bluish patches. There was a single pedunculated red nodule on the soft palate. The local and general condition deteriorated and death occurred towards the end of 1898. The beginning of the disease as a single lesion is noteworthy.

CASE 5.—A man, aged 56, was admitted to hospital in Feb., 1900, with diffuse œdema of the left hand, and hard, bluish tender nodules on the fingers, palm, and dorsum. There were also nodules on the right hand, which were not œdematous, and on the sole of the right foot. The disease began in 1889 as a deep red spot on the back of the left middle finger. During May, 1900, there was a daily eruption on various parts of the body of yellow spots about $\frac{1}{2}$ in. in diameter, resembling contusions, and due to circumscribed hæmorrhages in the deeper layers of the cutis. The centre of each appeared

œdematous. These either disappeared within a few days, or gave rise to a slowly growing central sarcomatous nodule. In July, 1900, the nodules on the hands and feet were smaller. The hæmatogenous development of the disease is of interest.

CASE 6.—A man, aged 56, had in May, 1900, œdematous, swollen, bluish-red hands, on which were scattered sarcomatous nodules. There were also nodules on the arms. The whole right lower limb was œdematous, and the leg and foot were diffusely infiltrated with new growth. The left lower limb was less swollen, but was infiltrated and covered with nodules. There were several nodules in the skin of the abdomen, and a red sarcomatous infiltration of the left upper eye-lid. A year later the condition was practically unchanged except for the frequent appearance of diffuse yellow discolourations of the skin, especially of the legs, which were due to deep hæmorrhages. The disease began in 1893, when 2 nodules appeared on the glans penis. These were excised, and did not recur. In 1897 a small nodule appeared on the left foot and was also cured by excision. In 1899 the red patches and œdema of the hands and legs appeared.

CASE 7.—A man, aged 82, noticed a swelling of the left hand in 1900. In May, 1901, the palm of the left hand was of a reddish-blue colour and covered with nodules. On the radial side of the left third finger were enlarged lymphatics. The left hand and forearm and the feet showed less marked changes. There were yellow discolourations due to hæmorrhages on the left forearm and on both legs.

CASE 8.—A man, aged 38, had a deep, red spot at the end of the left middle finger. It became indurated and was cauterised. As it recurred, it was excised 4 months after its appearance. It was an angio-sarcoma.

CASE 9.—A man, aged 44, noticed a small nodule, which slowly grew and became tender, on the skin of the lower third of the right leg. This hemispherical reddish nodule, $\frac{3}{4}$ in. in diameter, the surface of which was ulcerated, was excised, and a year later had not returned. It was a spindle-celled sarcoma with blood spaces.

CASE 10.—A man, aged 45, had 3 small nodules on the back of the right hand. These slowly disappeared, but were replaced by others, which were excised. About a year later there were 6 blueish-red, sessile or intracutaneous tumours on the right hand, one nodule on the left hand, and 2 subcutaneous nodules near the left elbow, but no other changes.

Some of these Cases deviate from Kaposi's description. Cases 3, 4, 5, 6, 7, and 10 are fairly typical. In Case 1 the typical distribution was not followed. In Cases 8 and 9 the multiple characteristic was absent, but the microscopic examination confirmed the diagnosis.

Although Kaposi placed these tumours among the sarcomata, it is much disputed whether they are not part of an infective disease analogous to syphilis. The usually multiple appearance, the frequency of retrogressive changes, and the consequent erratic course, tend to show that "sarcoma" is a misnomer. The writer has, however, failed to inoculate dogs and rabbits with the disease. He points out that structurally many of the tumours are cavernous hæmangiomata, and that, as the visceral metastases in Case 3 show, the colour depends on whether the new formation of blood capillaries or of spindle cells predominates. In Cases 2, 3, 4, and 5, the morbid growths consisted solely of cavernous tissue and contained no sarcomatous elements. There is frequently also a forma-

tion of lymphangiomata as in Cases 2, 3, and 7. These 3 processes are not necessarily combined, but each appears to be independent of and of equal importance with the other. The formation of malignant growths appears then to be but a possibly not necessarily constant, incident in the course of a general disease. The tumours may undergo myxomatous degeneration and then atrophy, or become converted into encapsuled fibrous tissue. The typical localisation of the tumours, and the hæmatogenous development of fresh nodules in Case 5 are also in favour of an infectious disease. The writer supposes that some virus penetrates the skin, and produces a local proliferation of spindle cells or of hæmangiomata or lymphangiomata, as the case may be. After a time it enters the circulation and produces fresh cutaneous tumours or hæmorrhages by embolism. These occur mostly on the hands and feet, which are the seat of election of hæmatogenous metastases. Thence the process slowly spreads centripetally through the lymphatics of the arms, the legs and the trunk. Exceptionally there may be acute exacerbations, in which the whole surface of the body is affected by emboli. Finally internal metastases appear. The local action of the virus on the tissues ceases after a more or less prolonged period and the proliferated tissues atrophy.

GAZETTE HEBDOMADAIRE DE MÉDECINE ET
DE CHIRURGIE, Jan. 12, p. 37.

Infantilism.

By Professor HUTINEL.

The term *infantilism* was first applied by Lasègue to individuals in whom some of the physical and psychical characters of infancy persist. Lorain and Brouardel developed

Lasègue's idea, and applied the term to ill-developed people, of feeble intellect, diminutive stature, and often of poor health. Hutinel defines infantilism as a morphological condition characterised by the preservation in the adult of the external features of childhood, and the non-appearance of secondary sexual characteristics.

The myxœdematous idiot is the most typical example of this condition. He is characterised by the following symptoms:—The face is round and puffy, the lips are thick and project, the nose is badly developed, the face smooth, the skin fine, and the complexion clear. The hair is thin, the eyebrows and eyelashes are scanty, the trunk is elongated and cylindrical, and the abdomen is a little prominent. The limbs are plump and decrease in size towards their extremities. A coat of adipose tissue covers the whole body, and hides the bony and muscular prominences. The genital organs are rudimentary, and pubic and axillary hairs are absent. The voice is shrill and harsh, the larynx is not prominent, and the thyroid body is generally small. The expression is apathetic, and the patients always appear listless. Such children do not laugh. They are frequently sad and are easily irritated. They vary in intelligence from the cretin who is imbecile, to the child whose mental capacity is slightly developed, with feeble ideation and sluggish memory. Their movements are slow, and their gait is uncertain. Dentition is disturbed. The temporary teeth do not always appear completely, and the permanent ones may never be cut. As a rule the permanent teeth are bad. The genital system remains imperfect. The testicles are small and do not grow. Often they do not descend. Puberty is late. The penis remains small and undeveloped, and there are no pubic hairs. Adenoids and hypertrophy of the tonsils with tonsillitis

are frequent. The circulation is defective. The extremities are frequently cyanosed. Radioscopy shows that the development and union of the epiphyses are retarded. Hysteria and epilepsy are often present, and the children show a peculiar mental condition of *naïveté*, timorousness, and irascibility.

Another form of infantilism is the dystrophic variety, defined by Lorain as "debility, slenderness and smallness of body, a kind of arrest of development affecting the whole individual rather than any special system—a persistence of juvenility which makes a man of 30 appear like one of 18." The cause is imperfect nutrition due to insufficient food or imperfect assimilation, or grave alterations of the digestive functions as in enterocolitis when growth and even intelligence are retarded. Usually this arrest is temporary, but sometimes it is permanent, and the subjects remain *little men* or *little women*. This arrest is often seen in premature children, who are born small and thin and brought up on sterilised milk. The assimilation is defective, and the development usually remains imperfect. Hepatic disease may also produce the same effect. In 1890 Hutinel saw a child, age $7\frac{1}{2}$ years, with tuberculous pericarditis, secondary cirrhosis of the liver, and considerable ascites. In 1892 and 1893 there was almost complete arrest of development. At the age of 16 the boy measured only 4ft. $1\frac{1}{2}$ in., and appeared like a child of 12. Gilbert and Fournier (*Revue des Maladies de l'Enfance*, 1895) mention a case of biliary cirrhosis in a youth of 19, who was small, badly developed, and beardless, with rudimentary pubic and axillary hair. His weight was only 49 kilos. Hasenclever reports the cases of a family of 5 children, 3 of whom had biliary cirrhosis and 2 were normal. Of the latter one, aged 20 years, measured 1 m. 69, and weighed 55.9 kilos (122 lb.). The other, aged 16,

measured 1 m. 60, and weighed 41.5 kilos (91 lb. 5 oz.). The eldest of the 3 with cirrhosis, aged 24, measured 1 m. 58, and weighed 42.2 kilos (93 lb.); the second, aged 22, measured 1 m. 49, and weighed 40.9 kilos (90 lb.); the third, aged 18, measured 1 m. 40, and weighed 31.9 kilos (70 lb.) Lereboullet, in 1901, published a case of biliary cirrhosis in a boy of 12. At 15 years his height and weight were the same as those of his brother aged 11½. The infantilism produced by these causes differs from that of myxœdema in the following particulars. Intelligence, though not well developed, is not absent. The child is small, but is in proportion. There may be traces of rickets, but the body has not the massive appearance of thyroid deficiency.

The question of genital infantilism is still *sub judice*. Variot published in 1901 the case of a boy of 12, with the retention of both testicles in the abdomen. This he held to be the cause of the nutritional defects, the increase in adipose tissue, and the arrest of cerebral and mental development of this child. Ausset holds that the effect has been mistaken for the cause, which he considers to be thyroid deficiency. Hertoghe affirms that thyroid development precedes that of the testicles, and that in this class of case thyroid treatment causes great improvement (See "REVIEW," Vol. III., p. 452). Apert (*Soc. de Pédiatrie*, April, 1901) publishes 2 cases in which thyroid administration gave good results. In one case the patient, aged 15½, was of normal weight, but had an abnormal amount of adipose tissue. His face was round and infantile, his voice shrill, and his intellect rudimentary. The penis was small. The condition was due to thyroid deficiency, and was much improved by treatment. The other patient, aged 17½, appeared to be only 13 or 14. Though otherwise well-

proportioned his genital organs were those of a child of 12 years. The penis was small, and extensively covered by the prepuce. There was no trace of pubic hair. His height was 1 m. 45; weight 39 kilos. After a year of thyroid treatment his aspect was more virile, his height 1 m. 53; weight 46 kilos. The testicles were of a normal size, and firm and sensitive. The penis had developed, and some pubic hair was present. Hutinel has himself observed a child of 8, in whom he diagnosed myxœdema with undescended testicles. Thyroid treatment improved his condition, and brought about the descent of the testicles. Testicular development has also some influence on growth. Though the osseous structures of castrated individuals may grow satisfactorily, development in other respects may be defective. In these cases treatment with orchitic extract is indicated. The writer thinks that genital infantilism is rare.

Cardiac defects certainly produce infantilism, especially if congenital. Acquired lesions may also produce the condition, especially mitral stenosis. Gilbert and Rathery have called this variety of infantilism *nanisme mitral*. There is arrest of growth, but frequently the genital functions are normal. The thorax is flat, the hair badly developed, the intelligence meagre and childish, and hysteria, dyspepsia and albuminuria are often present. The dystrophy is due to insufficiency of the blood supply. Sometimes the mitral stenosis may be an effect of the general dystrophy, as in patients with a tubercular or syphilitic heredity.

Meige and Allard quote the case of the tuberculous son of a tuberculous father, who, at 17½ years, looked like a boy of 10 or 12. The shoulders were broad. The pelvis was narrow, the bony protuberances were marked, and there was no hair on the face, pubis, and axillæ. The sexual organs were small but

well formed. He was, in fact, a diminutive man. Such cases may be seen in the children of tuberculous parents, who do not themselves develop tuberculosis. The heredity of predisposition is distinct from dystrophic heredity. In the same way arrest of development may occur in the children of syphilitic parents without development of syphilitic symptoms. Rickety children are also subject to arrest of development. Other causes of infantilism are paludism, a neuropathic heredity, and alcoholism, but it is probable that the children of alcoholic parents are sometimes myxœdematous, and sometimes have Lorain's type of dystrophy.

The writer concludes that there exist various types of infantilism, that myxœdematous infantilism is the most complete type, that on the other hand dystrophic infantilism includes several varieties which have some points in common with myxœdematous infantilism, but that they cannot all be regarded as due to thyroid deficiency, and that from a practical point of view early diagnosis is most important in the thyroid forms as they are most amenable to treatment.

VIRCHOW'S ARCHIV, Bnd. 167, Hft. 1, p. 92.
**Necrosis of the Œsophagus and Stomach
 in Scarlet Fever.**

By EUGEN FRAENKEL.

It is now known that true diphtheria is a rare complication of scarlet fever, and that the diphtheritic-like patches which occur are due to necrosis, which may spread deeply from the epithelial layer. Pseudo-membranes are not formed, and the Klebs-Löffler bacillus is absent. This gangrenous process frequently ascends and attacks the naso-pharynx and nasal mucosa, but rarely descends into the Œsophagus, and still more rarely into the stomach.

CASE 1.—A boy, aged 4, was attacked by scarlet fever on Jan. 18, and died of diarrhœa and asthenia on Feb. 3. The pharynx was reddened and swollen and the surfaces of the tonsils were grey and gangrenous.

NECROPSY.—The mucosa and submucosa were absent from the Œsophagus in its whole length, the surface was smooth and clean, and the circular muscular layer was exposed. There was an adherent, ragged slough just above the cardiac orifice of the stomach. The stomach was deprived of mucous membrane except for a small patch on its anterior wall. In places were greyish, adherent, ragged sloughs. The muscular coat was swollen, tough and œdematous.

CASE 2.—A well-nourished girl, aged 18 months, had scarlet fever. The cervical, axillary, and inguinal glands were enlarged. The tonsils were swollen, but the pharyngitis was not severe. There was double otitis, and death followed vomiting and diarrhœa.

NECROPSY.—There was a single caseating bronchial gland. The cervical glands were inflamed and in places breaking down. There were small gangrenous patches on either side of the uvula, and on the edges of the epiglottis. There were two ulcers on the anterior and posterior wall of the Œsophagus about 1 in. below the cricoid cartilage, one of which was covered with an adherent slough and surrounded by a line of demarcation. Below these the œsophageal wall was intact for 1½ in. Thence to the cardiac orifice it was of a dirty black colour and devoid of the mucosa and submucosa.

MICROSCOPIC EXAMINATION.—In the first case the lumen of the Œsophagus was bounded by gangrenous submucous tissue in its whole length. Between this and the muscular layer proper was small-celled infiltration, and the vessels were widely dilated. In the circular

muscular layer and in all but the most superficial layer of the necrotic submucosa, were crowded chains of streptococci. In the stomach the necrosis involved the mucosa and the muscularis mucosæ. On the gastric surface were streptococci and bacilli; the streptococci increased in number towards the œdematous submucosa, but did not penetrate the muscular layers. In the lower section of the œsophagus in the second case the necrosis also involved the deeper muscular layers.

The condition present in Case 1 is so rare in scarlet fever that the question was raised whether it could have been due to the accidental swallowing of a caustic poison. Against this theory were the facts that no caustic could have been swallowed during the fortnight spent in hospital, that the tongue and the posterior pharyngeal wall were intact, while the soft palate and tonsils presented the common changes found in death from scarlet fever, and that the single healthy patch in the stomach was in the position most frequently affected by caustic poisons. Finally the presence of streptococci and the microscopic appearance showed that the condition of the œsophagus and stomach was analogous to that commonly found in the tonsils and soft palate in scarlet fever. The necrosis was not "diphtheritic," that is, due to pressure on the vessels of a fibrinous exudation, but depended solely on the direct action of the streptococci and their toxins. It is identical with that which may occur in the throat and larynx in typhoid fever. Necrosis begins in the epithelium and may extend to the cartilage of the larynx. In typhoid fever however, staphylococci, not streptococci, are usually present. It is remarkable that the streptococcus, which normally produces phlegmonous pharyngitis and laryngitis with frequent abscess formation, should produce necrosis in scarlet fever often with very few

inflammatory symptoms. Since the organism, which penetrates the tissues from the surface and not from the blood, is identical in scarlet fever and phlegmonous pharyngitis, the condition of the tissues must determine the result.

The pharyngeal lesions may be healing while extensive destruction of the œsophagus and stomach is progressing. The condition of the pharynx in scarlet fever is, therefore, no guide to that of the structures below. It is noteworthy also that such serious lesions give rise to no characteristic symptoms and may produce none at all. In the first case there were abdominal pain, tenderness, and rice-water stools on the 4th day of the fever; in the second there were no gastric or intestinal symptoms, except diarrhœa; in neither were there any symptoms pointing to the condition of the œsophagus.

CASE 3.—A girl, aged 5, died of a severe relapse of scarlet fever which appeared before desquamation of the first attack was complete.

NECROPSY.—There were circumscribed patches of necrosis on the uvula and tonsils. The œsophagus was normal. Scattered over the whole of the gastric mucosa were superficial dull grey patches of the size of poppy seeds. The mucous membrane was not destroyed, and the discolouration was due to a small-celled infiltration of the interglandular tissue produced by crowds of streptococci in pure culture. The submucous tissue was œdematous. This case probably illustrates the first step in a process, the later stages of which were present in Cases 1 and 2. In the early stage recovery is still possible, in the later stages it is not. The streptococci had doubtless been swallowed.

The relation of the septic conditions of the throat which occur in scarlet fever to the forms of primary pharyngitis variously known as infective phlegmonous pharyngitis, œdema

of the glottis, faucial erysipelas, and submucous laryngitis, according as the pharyngeal or laryngeal symptoms are most prominent, is obscure, but both are due to one organism—the streptococcus pyogenes.

GLASGOW MED. JOUR., Nov.

The Symptomatology of Perforated Gastric Ulcer.

By R. O. ADAMSON, M.A., M.D.

This paper is based on 7 cases which occurred in the writer's practice.

1. SEX AND AGE.—Perforations, whether involving the general peritoneal cavity or productive of a subphrenic or other localised collection of pus, occur, broadly speaking, in females, and at ages of adolescence and early maturity. Exceptions, of course, are numerous. In one of the writer's cases the age was 70. At the other extreme, Roderick Maclaren mentions the case of a girl, aged 14. (*Brit. Med. Jour.*, 1899, p. 863.)

2. THE INTERVAL SINCE PERFORATION.—The symptoms have all a more or less important relation to the lapse of time and may be divided into :—1. Those which occur immediately and enable perforation to be diagnosed. 2. Those which occur later, and are evidence of developed peritonitis. In some obscure cases of intra-abdominal suppuration and thoracic complications the possibility of perforation of the stomach some time previously may be a valuable clue. The element of time influences the result of operation largely. 83 cases collected by Lundie (*Edinburgh Hosp. Rep.*, vol. iv) gives the following results :—“Operation under 12 hours, 22 cases, 14 recoveries (64 per cent.); after 12 to 24 hours, 23 cases, 6 recoveries (26 per cent.); after 24

hours, 38 cases, 5 recoveries (13 per cent.). In consequence of unrecorded failures these percentages are probably too high; their rapid decline is none the less significant, and gives warning most eloquently of the dangers of delay.” Keen and Tinker mention 26 cases operated upon within 12 hours with 80 per cent. of recoveries, and 16 cases operated on within from 12 to 24 hours with but 50 per cent. of recoveries. In some cases after an interval of a few hours treatment is hopeless. In others, success has been attained after many hours. The condition of the patient is the guide. The longest interval between perforation and successful operation that the writer has been able to find recorded is 6 days (Nicoll, *Glasgow Med. Jour.*, April, 1900). Notwithstanding wide-spread peritonitis and subsequent general pyæmia the patient recovered. If the symptoms point to a perforated ulcer, and, after some time there is improvement under medical treatment (a somewhat rare, but recorded circumstance), it would be justifiable to postpone operation. This applies when the diagnosis is uncertain. Such cases are very treacherous, and require most vigilant observation. Marshall relates an interesting case, in which despite many temptations to operate the condition of the patient apparently justified him in continuing medical treatment, which, after a long and complicated illness, was successful. (“REVIEW,” Vol. III., p. 232). He says, “among numerous records of cases of perforation of the stomach there appears to be quite a number in which recovery took place,” and that in nearly all no food had been taken for some time before the perforation. He quotes 4 such cases.

3. SHOCK, INCLUDING PULSE AND TEMPERATURE.—Shock varies considerably—from none to instant death. Many writers

magnify its intensity and importance and speak of operation being necessarily postponed till "shock has passed off." This seems dangerous teaching. The anæsthetic, and the effects of the operation remove the cause of the shock, and if this is not speedily done, a worse state is apt to supervene rapidly. As death sometimes occurs within 24 hours of perforation if no operation is done, and the mortality after operation increases enormously with delay, postponement on account of shock must be cautiously considered. In none of the writer's cases was the shock such as to cause delay in operation. Nor in any did the state of the pulse and temperature suggest it. Cases of sudden death from perforation of gastric ulcer have been recorded. On the other hand, Pearce Gould mentions a case in which shock was absent altogether. Thus, as regards diagnosis, shock is of little value.

The writer has never seen the pulse much altered from normal. The pulse of abdominal shock is as likely to be slow as rapid. Spencer writes thus: "The pulse is usually quickened, and steadily rises. Perhaps a steadily rising pulse in an obscure case is the most certain indication for surgical interference. Exceptionally, when the shock is very severe, the pulse-rate is sub-normal. Subsequently, the signs of general peritonitis become more and more marked." The temperature in all the writer's cases was normal, or subnormal, as might be expected in the early stage.

4. VOMITING.—This is only an occasional symptom. Dreschfeld says it is "generally absent; if it occurs at first it soon ceases." In one of the writer's cases there was incessant vomiting, but it was the vomiting of unsuspected septic peritonitis. In 2 cases the patient vomited once, and in 4 not at all.

5. LIVER DULNESS.—Dreschfeld says "Percussion gives a tympanitic note all over the abdomen, with absence or considerable diminution of liver dulness, from accumulation of gas between liver and diaphragm; this has been described as pathognomonic of perforation, but it may be absent if adhesions exist between the stomach and the liver; on the other hand this symptom may occur without perforation in simple tympanites if coils of intestine distended with gas find their way between the diaphragm and the liver, and it may occur in simple non-perforative peritonitis." To estimate the true value of liver dulness the state of the abdomen generally must be taken into consideration. Clearness on this point is usually wanting in the reports of cases. If the abdomen is flat, or, still more, if it is retracted, diminution or absence of liver dulness carries much weight. If there is any distension of the bowel the sign loses value, and becomes fallacious. Further, percussion of the liver gives very variable results, especially in the middle line. So much depends on the state of the bowels and stomach, the shape of the chest, and the voluminousness of the lungs. As a rule the absolute liver dulness extends normally to the costal arch in the nipple line, and in the middle line to the third of the distance between the xiphisternum and umbilicus, though this measurement is liable to variation. It is difficult to define, especially in stout people, and those with broad costal angles. In such persons, even under suspicious circumstances, the writer would attach no importance to absence of liver dulness in the middle line. Again, in people with long narrow chests, especially women, the costal margin in the nipple line may reach within half an inch of the level of the umbilicus. In such people with no question of perforation,

nor any reason to suspect cirrhosis of the liver (the total liver dulness being about normal) the writer has found a resonant note from 1 inch to 3 inches above the costal margin. In 5 of his 7 cases the liver dulness was carefully examined. In one it was not altered. In the other 4 it was diminished noticeably. In none was it absent altogether. In the case in which no alteration was found the abdomen was retracted, and there was pyloric perforation. Presumably there had been but little gas in the stomach to escape; there were no adhesions of the stomach to the liver or other part. The detection at one examination of a decrease of liver dulness which was not present, or present to a less extent, at a former examination, is important, but the observation is of no value if the abdomen has become swollen from distension of the intestines.

6.—CONDITION OF THE ABDOMINAL WALLS.—Extreme rigidity and a board-like feeling were well-marked in 3 of the writer's cases; some rigidity, probably much more than was apparent owing to stoutness, was present in a fourth; local rigidity was marked in a fifth; and there was no rigidity in a sixth, which was perhaps accounted for by advanced age and feebleness. In the early hours after perforation the abdomen is frequently retracted. Dreschfeld says the "abdomen, as a rule, is distended; but in a few cases, as pointed out by Wagner and the writer, it may be retracted by the spasm of the abdominal walls." According to Hemmeter, with great rigidity of the abdominal muscles, there is a flat abdomen. Spencer says—"At first the epigastrium is soft; after a few hours it becomes rigid and retracted, then distended, as peritonitis becomes established. The early lack of rigidity may prove deceptive." But early rigidity was the striking feature in most of the

writer's cases. Marsham's experience is "abdominal rigidity in the early stage, and distension later on;" Barling's, "the abdominal wall will be found to be retracted, and the muscles rigid, as though by packing the viscera together they were endeavouring to limit extravasation." In the majority of cases of sudden perforation of a gastric ulcer into the peritoneal cavity within 1 to 3 hours the abdomen will be found rigid and retracted to a certain degree; if the escape of fluid and gas be scanty and localised and in a region below the costal margin, there may be only local rigidity of the muscles. Every hour after perforation brings gradually increasing tumidity and distension of the abdomen.

7. THE RESPIRATION.—Barling says the "respiration is usually thoracic, quick, and shallow." This is in the earliest stage, shortly after perforation, with an abdomen more or less rigid and retracted. Thoracic respiration may occur at once and be one of the earliest signs. It was present in 4 of the writer's cases, and made rather a striking picture in association with the general condition. There was, also, in 3 cases, abdominal pain on respiration. The breathing was inclined to be shallow in these cases. It was not in any case sufficiently quick to call for special notice. Thus the respiration is usually thoracic, often remarkably so, shallow, and sometimes accompanied by abdominal pain.

8. THE PAIN.—Generally the pain is of sudden onset and very severe. The worst pain may be heralded by attacks of slighter pain. It is usually felt in the "pit of the stomach," or between the xiphisternum and umbilicus, and to the left of this; or it may be in the left hypochondrium; or in rare instances in the right iliac fossa, or some part of the abdomen distant from the stomach. The pain may remain localised at its point of

origin, but usually it spreads steadily, so as to involve a wide abdominal area. The pain is described as "burning," "agonising," "boring," "dreadful," and is evidently excruciating. There may be also pains in the thorax, shoulders, and neck. These are unaccompanied by tenderness. The abdominal painful areas are tender, sometimes exceedingly so. Palpation may elicit one specially tender spot in the epigastric region, with lessened tenderness radiating from it. Out of 5 cases in which the writer determined the point, pain was present in 4 elsewhere than in the abdomen. In one case the pains were widely distributed, and as much complained of as the abdominal pains, especially a pain all down the spine, and also one behind the upper part of the sternum. In the other 3 the pains were chiefly in the clavicular and acromial regions. These pains are of some assistance in diagnosis. Sometimes a feeling of impending death was present, and the patients hardly dared to move. In one case the patient lay with her eyes shut, would not so much as lift a finger, and only whispered when spoken to, so anxious was she to remain perfectly still. When the pain is in the right iliac fossa the perforation of appendicitis or pyosalpinx may be simulated. Various writers explain this position of the pain by the gravitation of stomach contents into that region.

9. TINKLING OR BELL-LIKE SOUNDS IN THE ABDOMEN.—The writer heard such sounds in 3 out of 4 cases in which he listened for them. If once heard, the ear can easily distinguish them from the usual gastric and intestinal sounds. To describe them in words is difficult. They are of a tinkling or bubbling character. They do not appear to have been previously described in cases of perforation.

10. EXTRAVASATION INTO THE PERITONEAL CAVITY.—There may be much extravasation, little, or none. On this point partly depends the symptomatology, prognosis, and treatment. A small perforation near the lesser curvature of the stomach anteriorly, with the organ empty, may cause only a localised peritonitis, with modified symptoms, or perhaps only a suspicion of perforation. Conversely, the rupture of an ulcer near the greater curvature posteriorly, with a full stomach, and free rupture, causes profuse extravasation, rapid intense peritonitis and a quickly fatal issue. All grades between these two extremes may be seen. The extravasation may be so profuse, and so quickly added to by peritoneal serous effusion, that there may be the ordinary signs of fluid in the peritoneal cavity. Then immediate operation is indicated, but the chance of success is small.

MEDICINE.

Simulation of Perforation of Gastric Ulcer. — Priestley Leech, M.D., F.R.C.S. (*Quarterly Med. Jour.*, Feb., p. 155). — In the two following cases laparotomy was performed in the belief that a gastric ulcer had perforated; one patient had been in hospital for a month with well-marked symptoms of gastric ulcer. The symptoms in both cases were those of gastric perforation—collapse, subnormal temperature, sudden epigastric pain and tenderness, and rigidity of the abdominal wall. In one case there was apparent diminution of the liver dullness. In both cases no signs of perforation were found, but the stomach wall was markedly congested towards the pyloric end.

CASE 1. — An unmarried woman, aged 20, was admitted to hospital on April 21, 1896, with marked symptoms of gastric ulcer. She progressed satisfactorily until May 21, when, after eating strawberries, she was suddenly seized with epigastric pain, collapse, faintness, and subnormal temperature. The pulse was thin, weak, and irregular; the expression was anxious, there was marked epigastric tenderness and rigidity of the abdominal wall; the liver dullness was apparently diminished. On opening the abdomen only some congestion of the stomach was found. Recovery followed.

CASE 2. — A woman, aged 21, was admitted to hospital August, 1900. She was anæmic, and had an anxious look. Dyspeptic symptoms had existed for some time, and on the evening of admission she had epigastric pain, with vomiting, collapse, subnormal temperature, great epigastric tenderness, and rigidity of the abdominal walls. Laparotomy showed only well-marked congestion of the pyloric end of the stomach. For 3 or 4 days after operation she could not retain food and complained of epigastric

pain. Subsequently she had 2 less severe attacks of abdominal pain. In one attack the pain was localised over the appendix. In comparing these 2 cases with cases of perforation, the only difference the writer can find is that the pain was not so intense, nor the rigidity of the abdomen so marked.

Examination of the Blood for the Typhoid Bacillus as a means of Early Diagnosis of Typhoid Fever. — Jules Courmont (*Bulletins de la Soc. Méd. des Hôpitaux*, Dec. 27). — Typhoid bacilli have been found in the blood in from 70 to 80 per cent. of cases of typhoid fever. The writer examined the blood in 9 cases and obtained the bacillus in pure culture in all. The blood was taken aseptically at the bend of the elbow and was cultivated at 37° C. in small flasks containing 20 cc., and in larger ones containing from 300 to 1000 cc. of bouillon. Into the smaller ones some drops of blood were received and into the larger ones, from 2 to 4 cc.

The writer finds that the typhoid bacillus is present in the blood in all ordinary and grave forms of typhoid fever, but reserves the question of slight and abortive forms. It appears early in the disease. He found it as early as the fifth day—the earliest period at which he had an opportunity of examining the blood. It remained in the blood until the end of the third week. It persisted longer in fatal or prolonged cases. The agglutinability of the bacilli was usually inferior to that of those kept in the laboratory for Widal's test, but it increased in the successive generations in bouillon until it became equal to that of the latter. There was no relation between the presence of the typhoid bacillus in

the blood and the agglutinating power of the serum. The bacillus was found in the blood in 4 cases at an earlier period than that at which the Widal reaction could be obtained. In two it was found on the fifth and ninth days respectively, while Widal's reaction was not obtained until the twenty-second and forty-fifth days respectively. Hence the great diagnostic value of examination of the blood for the typhoid bacillus, especially when Widal's reaction is negative.

The best method of obtaining cultures is to cultivate from 2 to 4 cc. of blood immediately after it is drawn in from 300 to 500 cc. of bouillon. If the bouillon is not turbid at the end of 24 hours the deposit should be shaken up. With the small quantities of bouillon mentioned above the writer was successful in only 21 per cent. of the cases.

The Constant Presence of Eberth's Bacillus in the Blood in Typhoid Fever.—Busquet (*Presse Méd.*, Jan. 15, p. 54).—The writer has examined the blood in 83 cases of typhoid fever and found the bacillus typhosus in all. Blood was drawn into a sterilised pipette from a vein (usually the median basilic) at the bend of the elbow. Tubes of bouillon were inoculated, and by sub-cultures on other media the presence of the bacillus was confirmed. In 1 case a positive result was obtained at the 4th trial; in 1 case at the 3rd trial; in 6 cases at the 2nd trial; in 30 cases at the 1st trial.

The bacillus was found alone in the blood in 26 out of 28 cases, but in certain cases, particularly in the severe or prolonged forms, other organisms were also found—in 3 cases the pneumococcus, in 4 the streptococcus, in 3 the staphylococcus pyogenes aureus, and in one case an undetermined diplococcus. Frequently the bacillus typhosus had not its typical form. It developed in the first cultures as a more or less short diplo-bacillus like that described by Vincent as growing in carbolised

broth. But in sub-cultures on fresh bouillon it assumed its normal appearance. It was found during the first week in 18 cases, during the second in 15, and during the third in 5. The writer, therefore, concludes that it is always present in the blood during the pyrexia.

Localisation of the Bacillus during Typhoid Fever by Injuries and by Previously Existing Lesions.—M. F. Widal and M. L. Le Sourd (*Bulletins de la Soc. Méd. des. Hôpitaux*, Jan. 17, p. 33).—A woman, aged 24, during convalescence from a long attack of typhoid fever, developed an abscess and 3 "oily" subcutaneous collections near punctures made in injecting hypodermically caffeine and normal saline solution. The abscess was beneath the skin of the abdomen, and the oily collections were on the left thigh. In the abscess the typhoid bacillus and the staphylococcus aureus were found. In the oily collections the typhoid bacillus was found in pure culture. Histological examination showed polynuclear cells mingled with some lymphocytes. The slight injury produced by the needle of the hypodermic syringe evidently localised the typhoid bacillus which must have been present in the blood. An analogous observation has been made by several writers who have found pneumococcic abscesses at the sites at which subcutaneous injections of caffeine had been made in cases of pneumonia.

Mm. Widal and Ravaut (*ibid.* Jan. 24, p. 45).—A young woman had chronic submaxillary tuberculous adenitis. During convalescence from typhoid fever one of the tuberculous glands enlarged and became red and fluctuating. On incision it yielded pus containing the typhoid bacillus in pure culture. Cicatrisation rapidly followed.

A woman, aged 34, had typhoid fever which, except for abdominal pain, most marked on the right side, ran the ordinary course until the twentieth day. On the twenty-first day vomiting

occurred and the abdomen became tympanitic and more painful. Febrile symptoms continued for 3 weeks. Then the abdominal pains returned in a violent form, greenish matter was vomited, and there was abdominal facies—pinched nose, hollow eyes, and leaden tinge. These symptoms persisted for a week and then gradually disappeared. On the sixtieth day the temperature was normal and the general condition was good. Three weeks after defervescence the patient got up, but the abdominal pain and tympanites at once returned, the evening temperature rose to 100·4, and a tumour was found in the right iliac fossa. Appendicitis was suspected, but laparotomy revealed a large ovarian cyst containing 1500 gm. of blackish fluid which yielded the typhoid bacillus in pure culture. The patient's blood had still a high agglutinative power. Rapid recovery followed the removal of the cyst and the right Fallopian tube.

Emulsion Albuminuria.—H. Cramer (*Münch. Med. Woch.*, Jan. 21, p. 101) has observed a peculiar condition of the urine in 3 cases of albuminuria.

CASE 1.—A woman with puerperal eclampsia became comatose. The scanty urine removed by catheterisation was brown, acid, and solidified on boiling. Forty-eight hours before death a grayish-brown, dense, milky turbidity appeared in the urine, which did not clear on heating, the addition of HCl, repeated filtration, or centrifugalisation. With an immersion objective the turbidity was seen to be due to innumerable minute globules in continual active Brownian movements. The lowest layer of the centrifuged urine contained a few red blood corpuscles, scattered leucocytes, and uric and oxalic acids, but no casts. Boiling the turbid urine did not coagulate it, but produced a copious precipitate and destroyed the emulsion. On standing for 2 warm summer days the turbid urine separated into a clear nut-brown fluid and a scanty precipitate.

CASE 2.—In a fatal case of puerperal eclampsia the urine drawn off shortly before death gave the same results as that just described, on boiling, the addition of HCl, filtration, and centrifugalisation.

CASE 3.—A woman, aged 58, had uræmia. There were headache, impaired vision, anxiety, and muscular spasms. The urine was scanty, acid, of a dark colour, gave a copious precipitate of urates on standing, and solidified on boiling. Death occurred at 9.30 p.m. At 5 p.m. on the afternoon of that day, when no urine had been passed for 48 hours, 300 cc. of turbid, milky urine were drawn off with a catheter. In appearance and reactions it in every respect resembled the turbid urine of Case 1. Further investigation showed that after free dilution with water the turbidity almost disappeared on the addition, drop by drop, of acetic acid or caustic potash. The same result was obtained by adding great excess of water and warming. Agitation with ether and the micro-chemical examination with osmic acid gave no indications of fat. The turbidity of the urine disappeared when digested with pepsine and dilute HCl. After prolonged standing crystals of uric acid were precipitated. It was improbable, however, that uric acid constituted any considerable proportion of the bodies on the presence of which the turbidity depended, since these, when precipitated by alcohol, did not give the murexide reaction, and had the appearance of a flocculent albuminous, rather than of a uric acid precipitate. A crystalline precipitate, which was probably allantoin, was obtained by heating the urine for 1 hour with 1 per cent. of HCl. It contained also a few uric acid crystals and gave a feeble murexide reaction. These results showed that the turbidity was due to an emulsion of albumins possibly mixed with small quantities of allantoin and uric acid.

Though this albuminous emulsion has not been previously recognised, the fact that the writer observed 3 cases within a short period tends to show that it is not uncommon. In all cases the patients were comatose, and urine

could be obtained only by catheterism. On inspection the turbidity may be supposed to be due to urates or other salts, and if it persisted after filtration probably would be attributed to bacteriuria. Under the microscope the globules may be mistaken for cocci. In the writer's cases, however, bacilli (chiefly the hay bacillus), not cocci, were obtained in cultures. The fact that the urine cleared after standing in a warm room first suggested that the turbidity might be due to albumin, which would be dissolved by the common peptonising organisms.

Thus to the two emulsions of urine—chyluria and lipuria—emulsion-albuminuria must be added. Its significance is doubtful, though the facts that in all 3 cases there were advanced kidney changes and coma, and that its appearance preceded death by a few hours only, point to its being of unfavourable augury—possibly a certain sign of impending death.

Phlegmonous Gastritis.—Dr. W. Cayley (*Lancet*, Jan. 25, p. 228).—A woman, aged 26, was admitted to hospital on Nov. 19. She had been taken ill on Nov. 13 with rigors, sore throat, headache, and pain in the abdomen and limbs. On the 17th she began to vomit and continued to do so on the 18th; the vomiting was accompanied by severe abdominal pain. On admission there were all the symptoms of acute general peritonitis with dilatation of the stomach. The temperature was 104.6°. She gradually sank and died on the 21st. There was no vomiting or action of the bowels after admission.

NECROPSY.—There was general suppurative peritonitis. The stomach was dilated and its coats were thickened. On section there was found purulent infiltration of all the coats between the mucous membrane, which appeared intact, and the peritoneum; this change was most marked in the pyloric third. Bacteriological examination of the purulent exudation

from the submucous coat showed a number of bacilli which did not stain by Gram's method and which resembled morphologically bacillus coli communis; there were also a few short chains of streptococci which stained by Gram's method. The other organs presented nothing abnormal. Probably the streptococcus infection was primary and the bacillus coli secondary.

For the production of phlegmonous gastritis two conditions are necessary—virulent organisms and a condition of the mucous membrane which allows them to penetrate. In a large proportion of cases the patients are intemperate or the attack follows some excess or error of diet. It has also supervened on cancer, ulceration of the lower end of the œsophagus, and injury.

Tuberculosis Simulating Acute Rheumatism.—Dr. Antonin Poncet (*Lyon Médical*, Oct. 27, p. 594).—A cab-driver, aged 49, was admitted to hospital on July 29, 1901. About the age of 15 he had cervical adenitis, which disappeared without treatment. In July, 1900, he was suddenly seized with severe pains in the knees and ankles. In a few moments these became so violent as to prevent walking. On the following days there were pains in the shoulders, elbows, wrists, etc., but without physical signs, except in the knees and ankles where there were swelling and redness. Acute articular rheumatism was diagnosed and salicylate of sodium was given. The articular pains in the upper limbs disappeared in a few days, but the symptoms in the knees and ankles lasted a month, and in Sept., 1900, these joints were still the seat of painless swelling, which gradually disappeared.

In June, 1901, there were pain, redness, and swelling of the right knee and ankle. Acute articular rheumatism was again diagnosed. The evening temperature was 102° for some days, but it gradually became normal. The pain

disappeared from the ankle, but in spite of salicylate and antipyrin the knee remained in the same state.

The right knee was very swollen and the skin glossy and rosy. The leg was semi-flexed on the thigh and movement evoked severe pain. Palpation was very painful and infectious rheumatism of undetermined nature was diagnosed. An intra-articular puncture was made and a small quantity of serous fluid withdrawn, which, injected into the cellular tissue of a guinea-pig's thigh, caused a caseous suppuration of the glands of the groin and death in 12 days. At the same time the serum reaction for tuberculosis was found positive.

In Oct. the knee was globular and puffy. The redness had disappeared, and the skin was glossy and white. Movements were still painful, but less so than at the outset. Palpation was no longer uniformly painful, the pain was localised in the upper extremity of the tibia and in the inter-articular line. The signs were clearly those of a tubercular osteo-arthritis. The patient was found to be suffering from phthisis.

This case shows that tuberculosis may simulate acute rheumatism.

Perforation in Intestinal Tuberculosis.—

Charles Laubry (*La Tribune Médicale*, Oct. 23, p. 845).

CASE 1.—A man, aged 60, was admitted to hospital on Dec. 14 for vague pains in the epigastric region, coming on by crises, without apparent cause and without marked relation to meals or digestion. They were accompanied by watery vomiting, which was rarely bilious. There was slight constipation. These symptoms gradually developed during 2 months, and were followed by complete anorexia, and emaciation. There were no physical signs. Cancer of the stomach of slow growth was diagnosed. The patient's weight gradually diminished and the pains radiated all over the abdomen. In both inguinal

regions was a mass of small hard glands. Marked hypochlorhydria also pointed towards gastric cancer and an operation was proposed. On March 13 the temperature rose to 99.2°, and the pulse became rapid and intermittent. There was no pain but there was torpor and slight delirium. On March 15 the temperature became normal, but the pulse remained small and rapid. He passed into a state of continuous somnolence, the cachexia rapidly progressed, there were diarrhoea and incontinence. Death occurred on March 17.

NECROPSY.—The peritoneum was covered with hard, whitish granulations. An agglutinated mass was formed by the terminal coils of the small intestine, the ileo-pelvic colon, the cæcum, the upper part of the rectum, granulations, and purulent and fæcal debris. In the small intestine was a series of minute perforations, some about the size and shape of a sixpence, others about that of a pin-head. On opening the intestine numerous ulcers were seen, some typically tuberculous, others elongated in the long axis of the intestine. The mesenteric glands were enlarged, and formed a chain in front of the vertebral column. The stomach was dilated.

CASE 2.—A girl, aged 12, was admitted to hospital on Jan. 31. She had had a cough for more than 3 years, but during the last few months it had become more frequent and was accompanied by much expectoration and by slight hæmoptysis. From this time she became thin, lost energy, perspired at night, and had evening pyrexia. She had no appetite, did not vomit, but suffered from troublesome and sometimes bloody diarrhoea. The temperature was 102° and pulse 104. The chest showed the signs of phthisis. The abdomen was supple, though painful in places, especially on the right side, where in the iliac fossa, gurgling could be detected. Tuberculous enteritis was diagnosed. From Feb. 1 to March 17 partial milk diet was given, and the diarrhoea was treated. There was irregular fever, attacks of dyspnoea and of

cough, with nummular expectoration. The cachexia increased. On March 18 the patient, who had for some days had more than the usual abdominal trouble, was looking much worse, and the abdomen was very tender. The diarrhœa had ceased and there was no vomiting, but the temperature fell. Perforative peritonitis was diagnosed. The pulse was 120, small, and hard. The abdomen became slightly swollen, there was marked constipation and slight retention of urine. Death took place on March 30.

NECROPSY.—The intestines were congested, slightly agglutinated, and covered with greenish foetid pus and fibrinous membranes. In the pelvis was half a pint of thick, foetid, blackish fluid mixed with pus. In the middle of the small intestine was a perforation of the size of a threepenny piece. Two other smaller perforations were found in the brain. The points in the case are the slow evolution of the peritonitis, viz. a fortnight, and the fall of temperature, several times below normal, which probably depended on fresh perforations.

Plumbism in Electrical Workers.—Labbe et Ferrand (*Bulletins de la Soc. Méd des Hop.*, p. 1367, 1901).—Four cases of plumbism occurred amongst the mechanics of an electric accumulator factory. The workmen were exposed to an atmosphere laden with finely powdered lead oxide, and later humid with lead sulphate. Intoxication was rapidly produced. Colic occurred in the different cases 5 weeks, 2, 3, and 5 months after commencing work. All the patients were profoundly anæmic. In 2 cases paralysis, accompanied by marked muscular atrophy supervened. In one case the muscles of shoulder, arm, and forearm, in the other, the deltoids, supra- and infra-spinatus, and the muscles of the thenar and hypothenar eminences were affected. Neither albuminuria nor constipation was present.

The plumbism of electrical workers with its rapid onset, marked paralysis, and absence of visceral lesions, constitutes a type quite different from that of painters, plumbers, pottery-workers, etc., which is characterised by slow onset of colic and paralysis and is accompanied by lesions of liver, intestine, and kidneys. The extension of electrical industries may lead to the increase of such cases, and the usual hygienic precautions should be thoroughly enforced. The men ought not to drink when at work, and occasional doses of sulphur or potassium iodide should be used as a prophylaxis.

Gangrenous Pancreatitis.—Tollet (*Finska Läkarsällskapets Handlingar*, p. 601, 1901).—On Aug. 21, a woman, aged 44, complained of intense pain in the epigastrium. She vomited persistently. The temperature was normal and pulse 120, and small. The abdomen was swollen and tympanic. There was marked constipation. Saline and assafoetida injections were given, but neither flatus nor fæces was passed. Laparotomy was proposed, but on the 24th the bowels acted, and the tympanitis diminished. Next day the temperature rose to 103°, the lower lobe of the left lung was dull on percussion, and bronchial breathing was heard. Vomiting continued until Sept. 1st, the epigastric pain increased, and food could not be taken. Morphia was given. A tumid mass could be felt just above the umbilicus. The temperature continued high, and the pleural effusion increased. The vomit became dark-brown and bloody, and on Sept. 19 small masses of gray foul-smelling detritus were observed. The vomiting was so frequent that large doses of morphia were necessary to restrain it. The patient rapidly sank and death occurred on Sept. 20. The urine did not at any time contain albumin or sugar.

At the necropsy the heart was found to be fatty, and the lungs hæmorrhagic. The pancreas

was brown and necrotic and almost unrecognisable. Perforations into the stomach and peritoneal cavity had taken place. There was no obvious cause for the pancreatitis.

these two spots for a month the disease spread to the left elbow, and finally to other parts.

Psoriasis after Vaccination. — Emil Wernstein (*Wien. Med. Woch.*, Jan. 25, p. 161).—Psoriasis rarely appears for the first time shortly after vaccination. Primary localisation of the eruption on the vaccination cicatrices is still rarer. Twenty-four cases have been reported in which psoriasis appeared to be connected with vaccinia. The disease cannot have been inoculated with calf lymph, for psoriasis in calves is unknown. The cause is the traumatism. Psoriasis has repeatedly appeared after cutaneous lesions, and the parts usually affected—the elbows and knees—are those most exposed to injury. The irritants may be chemical, such as iodine, and cantharides, thermic, or mechanical. Psoriasis may be excited by the pressure of a walking stick on the palm of the hand, of tight clothes round the waists of women, and of tight boots, garters, or collars, and may follow riders' excoriations. In the following case the irritant was vaccination :

A man, aged 22, was vaccinated with calf lymph in 2 places on the left arm, about the middle of Oct. Raised red spots remained after the scabs had fallen off. Early in Feb. these became covered with white scales and soon presented the characters of typical psoriasis. After remaining localised in

Abscess of the Liver in the New-Born.

—Max Björkstén (*Finska Läkarsällskapets Handlingar*, p. 909, 1901).—Fourteen days after normal birth a well-developed male child lost its appetite and had diarrhœa. The stools were green and slimy. On the 22nd day, after a restless night, a red rash appeared. It rapidly extended over the whole body, and scarlatina was diagnosed. The heart and lungs were apparently normal, but the abdomen was very large. The following day the rash disappeared, but the temperature gradually rose to 102·2° and death occurred on the 27th day of life.

At the necropsy the liver was found of normal size but abnormally firm. On the under surface of the right lobe was a large abscess, which communicated with the ligamentum teres. In cultures made from the abscess, liver, kidney and general blood-stream, the staphylococcus pyogenes albus was found. Microscopic examination also showed it in the detritus of the abscess cavity.

Only 60 similar cases have been reported. Finizio, amongst 12,000 children in the Naples Hospital, saw only 1 case, Lancare 1 in 562 children, and Birch Hirschfeld only 4 in 410 necropsies. Of the 60 cases but 3 are attributed to umbilical infection, which caused the lesion in the present instance.

THERAPEUTICS.

Adrenalin.—Dr. Jokichi Takamine, of Tokio, (*Scottish Med. and Surg. Jour.*, Feb., p. 136).—In 1900 the writer isolated the active principle of the suprarenal gland in a pure, stable, crystalline form, to which he gave the name of adrenalin. It is a light, white, micro-crystalline body, which exists in 5 or more different forms. It has a slightly bitter taste, and is sparingly soluble in water, but perfectly stable in the dry form. It is slightly alkaline, and combines with acids to form salts. The solution of adrenalin gives a beautiful green colour with ferric chloride, and a red colour with iodine. It is a powerful reducing agent, and may be so used in various arts and manufactures, such as developing photographic plates. With an ordinary alkaloidal reagent it gives no precipitate, showing that it is not an alkaloid in the ordinary sense. Its analysis gives the empirical formula $C_{10}H_{15}NO_3$. Adrenalin is prepared as follows:—The suprarenal glands of sheep or oxen are disintegrated and extracted with water. The extract is treated with alcohol to throw down the non-active constituents, organic and inorganic. The filtrate is evaporated in a vacuum to proper consistency and treated with an alkali, which precipitates the active principle in a crystalline form. This is purified by repeating the process.

The physiological activity is extraordinary. A fraction of one drop of a 1 in 50,000 solution of adrenalin, or its salts, blanches the conjunctiva within one minute. It is the strongest hæmostatic and astringent known. The intravenous injection produces powerful action upon the muscular system in general, but especially upon the muscular walls of the blood vessels and heart, causing an enormous rise of blood pressure. It is thus a very strong cardiac stimulant. As far as has been observed it is non-irritating, non-poisonous, and non-cumulative. It is indicated in morphine and opium poisoning. It has given good results in circulatory failure,

and in the prevention of the collapse of anæsthesia and allied conditions. It is invaluable in performing bloodless operations on the nose, ear, eye, and throat.

Suprarenal Extract as a Hæmostatic in Hæmophilia.—Wm. Milligan, M.D. (*Brit. Med. Jour.*, Feb., p. 266).—Severe hæmorrhage followed the removal of naso-pharyngeal adenoid vegetations in a boy, aged 10, who was a hæmophilic, but the fact was unknown to the parents and to the writer. The operation was performed under chloroform with Gottstein's curette, the patient's head hanging over the side of the table. Bleeding at the operation was comparatively slight, but about 20 hours later several pale clots were vomited. Examination revealed constant though slow oozing of pale pinkish fluid from the naso-pharynx along the posterior pharyngeal wall. The nose was syringed with iced water and a hypodermic injection of ergotine given. The oozing, however, continued, and on the following day the naso-pharynx was packed with an iodoform gauze plug. Despite the tight packing the constant oozing continued, and the boy became pale and blanched. The plug was removed and another, soaked in turpentine, introduced, with no better result. Finally a plug of gauze soaked in a solution of suprarenal extract was tightly packed into the naso-pharynx. No further hæmorrhage ensued.

See also "REVIEW," pp. 105, 106.

Suprarenal Extract in Gastro-Intestinal Hæmorrhage.—W. Soltau Fenwick, M.D. (*Brit. Med. Jour.*, Nov. 30., p. 1596).—Suprarenal extract is often of the greatest value in severe hæmatemesis. During the past 18 months the writer's results have been so uniformly satisfactory that he has abandoned all

other remedies. He believes that at least 5 cases would have been fatal from loss of blood had other methods been employed. As soon as possible after an attack of hæmatemesis he usually gave 10 fluid ounces of a freshly-prepared decoction containing 2 gr. of the desiccated gland to the ounce, and repeated the dose in 2 hours. In 2 cases, in which melæna was the only symptom, 3 doses were given in 4 hours. Occasionally the first dose produced nausea. The cases which afford the most immediate and striking results are those in which the ulcer is comparatively recent, and is situated near the cardiac end of the stomach, as in the acute disease of young adults, and in that which sometimes complicates cirrhosis of the liver and valvular disease of the heart. On the other hand, in chronic ulcers of the pyloric region, in which the eroded vessel is often large and so firmly embedded in fibrous tissue as to be incapable of contraction, suparenal tissue, in common with other hæmostatics, will probably be found of little value; but even in such cases an attempt should be made to irrigate the stomach with a strong solution through a soft tube. The constant slight hæmorrhage of gastric cancer often ceases under one dose daily. Enemata of the extract often control the bleeding from inoperable rectal cancer.

sq. in., according to the kind and seat of the neuralgia. It ought to be made of very thick spongy tissue, such as two or three layers of well moistened felt. The metal of the electrode should be parallel to the skin. The water which soaks the electrode should be prevented from collecting in the lowest parts, lest inequality of resistance be produced, and, consequently, a sore. The patient should be so placed that the active electrode is in a horizontal plane. Thus in facial neuralgia, the patient is placed on a long chair with the head supported on a cushion, so that the affected side is horizontal. The kind of metal used for the positive electrode is important. As the intensity of the current ought to be very strong, and the duration of the sittings very long and repeated, copper, brass, tin, lead, or nickel are not suitable. On these metals is produced a coating of carbonate and oxide, which is a bad conductor. At certain points the electric density is greater than at others, and eschars may easily be produced. The most suitable metal is aluminium or platinised copper. The best would be platinum, but its cost and great density prevent its use. In the case of aluminium, little carbonate and oxide is formed. It is preferable to use copper or platinised brass, that is, brass covered with a coating of platinum.

The current produces electrolytic modifications in the nerve ramifications and vaso-motor changes around the nerves. More complete tissue changes and, consequently, better nutrition result. This causes appreciable improvement in the neuralgia which terminates in recovery if electricity has been well applied and the sittings given regularly. The duration of the sittings in extremely painful neuralgia, such as trigeminal, ought to be one hour to one hour and a quarter, with a current of 60 to 80 milliampères. It is well to allow the patient to rest for 20 to 30 days after a great improvement has been obtained; then the sittings are resumed, and complete recovery usually follows.

Electrical Treatment of Neuralgia.—Dr. Bordier (*Journal des Praticiens*, Nov, 30, p. 753).—The more recent the neuralgia, the more successful is electrical treatment. Many sittings are necessary. The positive pole of the galvanic current is used as the active electrode. The electrodes must be made with the greatest care. The negative electrode ought to be very large—40 to 80 sq. inches—and well covered with felt or layers of gauze. It may be applied to any point in the back, behind the thigh, or on the abdomen. The active electrode, varies in size from 8 to 24

TRIGEMINAL NEURALGIA.—One of the most important points in the treatment is the shape of the aluminium or platinised copper of the facial electrode. It should be cut so as to present three prolongations for application to the forehead, the region between the eye and the upper lip, and the region of the chin below the lower lip. On this plate of metal there should be a layer of gauze or felt, reaching beyond the edges of the metal. The shape of the electrode should correspond closely with that of the patient's cheek, and between the skin and the electrode a layer of absorbent cotton wool should be cut so as to cover the whole of the affected side of the face as far as the root of the nose. The thickness of the spongy layer should be uniform, so as to avoid the producing of eschars, which so readily result from a strong current. The spongy layers having been thoroughly moistened with hot water, and no excess of water left in the porous meshes, the electrode is applied and kept in place by rubber bands. The patient should lie in bed or on a long chair, in the horizontal position, so that the absorbed water remains uniformly distributed in the spongy layers. (In the vertical position the water would gradually descend to the lower part). The current is turned on gradually, through a rheostat, to a strength of from 30 to 80 milliamperes. At first a daily sitting of an hour should be given. If all the precautions are strictly followed, a uniform red tint of the skin will be observed. The paroxysms usually soon diminish in frequency and intensity; then the applications should be made every second day. When the pain is produced only by the touch of a handkerchief, the treatment may be suspended, but if the pain reappears it should be recommenced with a weaker current of, say, 30 to 50 milliamperes in sittings of one hour daily. These should be given for two weeks after disappearance of the pains.

CASE 1.—A man, aged 59, suffered for 10 months from tic douloureux, for which he was

treated with aconitine, quinine, etc., without improvement. The attacks so increased in intensity that he could not speak or eat without feeling sharp lancinating pains in the right upper lip, which radiated towards the inner canthus of the eye, and towards the supra-orbital region. The faradic current was used several times without success. The writer applied the galvanic current. A facial electrode of 24 sq. in. was fixed to a thick mass of absorbent cotton wool, cut so that, with the exception of the eye and ear, half of the face was covered. The upper part of the cotton wool reached as far as the sagittal suture, the surface covered by the electrode being about 48 sq. in. Another mass of cotton, about 4 sq. in., was applied over the upper lip, where the pain was worst, and over it an electrode of the same surface. Two bands of caoutchouc kept the active electrodes *in situ*. From time to time, to keep the cotton-wool sufficiently moist, a sponge soaked in tepid water was squeezed on to the upper part. These two electrodes were attached to the positive pole, whilst two plain electrodes, each of 32 sq. in., were placed one on the dorsal region, the other over the sternum. They were attached to the negative pole. With the aid of the rheostat the current was introduced gradually, the strength being gradually increased to 42 milliamperes. There was abundant salivation. After 20 minutes the current was slowly lowered to zero. During the stage of diminution the current should be reduced very slowly if vertigo is to be avoided. Intense redness appeared when the electrodes were removed. The sittings were given at first daily, the strength being increased each time. It was possible to increase the current to 80, 90, and even 100 milliamperes. Gradual improvement ensued after 7 sittings. The patient had less pain on eating and the sittings were given only every 2 days. Improvement became more and more marked, and after a month the pain ceased.

CASE 2.—A man, aged 60, had facial neuralgia for 3½ years, the attacks being so severe that he

rolled on the ground. He was relieved only by inhalations of ether pushed almost to total anæsthesia. The most painful part was the right upper lip, and several teeth had been extracted from the upper jaw without effect. The electric treatment was commenced on Nov. 10. A facial electrode well-covered with a thick layer of cotton-wool well-moistened in hot water was carefully applied to the right side of the face and kept in position by a large rubber band; the surface covered was 24 sq. in. The negative electrode was applied to the back over 40 sq. in. The current was gradually increased to 60 milliampères, which the patient endured for half-an-hour. Twenty sittings of 40 to 50 minutes were given. About the tenth sitting there was great improvement, the pains having decreased both in frequency and severity. Thereafter the sittings were held every second day till Dec. 14, when they were stopped. The patient was not seen again till March when he complained that lancinating pains had returned in his right cheek; but there were no more paroxysms of tic douloureux. Galvanism was recommenced; the sittings being held every day for a week, then every second day. The strength of the current was gradually diminished to 30 milliampères in the last sittings. He has been free of neuralgia for 4 years.

The writer emphasizes the importance of using currents strong, and of sittings lasting one hour. Complete recovery can thus be obtained in most cases.

Intestinal Lavage with Oxygenated Water.—H. Roger (*Presse Méd.*, Jan. 1, p. 7).—The writer employs 100 cc. of water oxygenated with 12 volumes of oxygen to which he adds 900 cc. of boiled water containing 5 gm. of chloride, 3 gm. of phosphate, and 0.5 gm. of bicarbonate of sodium. A soft tube is passed into the colon, and the liquid injected slowly under a low pressure from once to thrice daily. From

$\frac{1}{2}$ to 1 litre is injected at each operation. Occasionally painful contractions of the bowel occur. The amount injected should then be diminished, and later increased. The results are good in dysenteric colitis, and also, though in a less degree, in muco-membranous colitis. In the latter the expulsion of mucus is favoured, the contractility of the intestinal muscles increased, and the intestinal dilatation (which is often a complication) is thus diminished. Fermentation is inhibited. In fermentative cases it is best to wash out the intestine only twice or thrice weekly. The severe pain in a case of dysenteric colitis, which had been treated for 15 days with many remedies, and by lavage with Condry's fluid, was relieved by two injections. The motions diminished from 12 to 15 to 2 daily, and in 4 days were normal.

Urotropine and Salol as Urinary Disinfectants.—R. Faltin (*Finska Läkare Sällskapets Handlingar*, 1901, p. 623).—In 24 cases of cystitis from various causes the urine was bacteriologically examined after giving 15 to 25 gr. of urotropin, and 45-60 gr. of salol. After giving urotropin few cocci were found, but the bacteria which stain by Gram's method, especially the *B. coli*, were found in large numbers. Salol, on the contrary, caused disappearance of the bacteria mentioned, but the cocci, especially staphylococci, were not removed. These different actions are not specific, because all microbes are to some extent influenced by both remedies, but certain varieties are more sensitive to the one drug than to the other. In many cases in which the drugs were successively employed the urinary organisms oscillated according to the one used. When cocci were present they disappeared under urotropin and were replaced by bacilli, and when bacilli were present, salol effected their removal, but cocci frequently appeared in their place. Albuminuria contra-indicates salol but urotropin can be safely given

The latter, however, acts best in an acid medium, and should be combined with boric acid. Up to 20 gr. of urotropin and 20 gr. boric may be given daily.

Treatment of Tuberculosis by High Frequency Currents.—Doumer (*Gaz. Heb. de Méd. et de Chirurgie*, Jan. 9, p. 32).—The writer reports to The Société Centrale de Médecine du Nord the result of observations in more than 60 tuberculous patients whom he treated with the high frequency current. Appetite increased, cough generally diminished, hæmoptysis was reduced, the bacilli disappeared in a remarkable fashion, and the general condition was much improved. The results varied with the period at which the treatment was begun. In one severe case the bacilli disappeared rapidly, and after 18 months had not reappeared, though in the interval the patient had a cold. In another case the bacilli disappeared and the patient's condition improved with equal rapidity. When the treatment is begun in the later stages of the disease the results are much less satisfactory.

Treatment of Surgical Tuberculosis by High Frequency Currents.—L. Imbert and J. Denoyés (*Gaz. des Hôpitaux*, Feb. 6, p. 137).—A number of observations on the treatment of pulmonary tuberculosis by high frequency currents has recently been published. More recently surgical tuberculosis has been similarly treated. The writers publish their results in 3 cases.

CASE 1.—**TUBERCULOSIS OF THE WRIST JOINT.**—A man, aged 34, of healthy parentage but undersized and subject to bronchitis, knocked the back of his right hand against a table. The blow produced a painful swelling which was most intractable to treatment. After 5 months he came to hospital, with an ill-defined swelling on the

back of his right hand, chiefly over the 2nd, 3rd, and 4th metacarpal bones. It extended from the radio-carpal joint to about the distal fourth of the metacarpal bones. On palpation it was hard, and the tendons could not be felt. The 3 middle metacarpal bones seemed fixed at their proximal ends. The muscles of the forearm were wasted. He could not shut the hand. Passive movement of the radio-carpal, metacarpophalangeal, and phalangeal joints was much restricted. There was spontaneous pain, which was more severe at night and radiated into the elbow- and shoulder-joint. There was also pain on pressure and on movement. At the apex of the left lung were dulness and crepitations, and at the right apex there was slight dulness. He was treated by direct applications of the high frequency current—a sheet of moistened tin being applied to the upper aspect of the forearm and another to the right hand. The strength of the current varied from 400 to 500 milliampères, and was usually applied for 10 minutes. In two months movement was much freer, and he could shut the hand. In another month he was able occasionally to return to his work as a waiter; strength was gradually gained, and pain steadily diminished. A month later the swelling on the back of the wrist was much softer and smaller. The movements of the wrist were still somewhat restricted, but those of the fingers were normal and painless. After 40 applications of the current he was discharged cured, and five months afterwards he remained well.

CASE 2.—**TUBERCULOUS ADENITIS.**—A laundress, aged 17, of good personal and family history, had progressively increasing enlargement of the glands in the neck just beneath the angle of the right jaw. After 15 months the skin broke, and the suppurating glands discharged abundantly. Under treatment with boric baths and iodoform ointment the discharge dried up, and the wound cicatrised, but some swelling remained, and increased until the patient came to hospital, when there was a lobulated mass, composed of distinct nodules, stretching along the

sterno-mastoid and extending to the sub-occipital region. All the glands were slightly tender, not adherent to the skin, and movable on the deeper structures. There was no fluctuation. The skin was not inflamed. The respiratory system was normal. Direct applications of the high frequency current were made, a sheet of tin being laid on the enlarged glands. A current of 200 milliampères was applied thrice a week for 5 to 10 minutes. After 20 applications she left hospital with the glandular enlargements hardly perceptible—the largest being about the size of a pea. She did not again report herself.

CASE 3.—TUBERCULOSIS OF BONE.—A dress-maker, aged 21, had, at 11, hip-disease and an abscess on the inner aspect of the right arm. Nine years afterwards she noticed a swelling at the lower part of the arm, which steadily enlarged. When seen there was swelling a little above the elbow on the postero-external aspect of the arm. The skin was unaltered. The humerus felt enlarged and swollen for half its length. On radiography the medullary canal could not be seen; the translucency of the bone was altered in its whole length and the contour was irregular. The bone was thickened especially at the junction of the lower and middle third, and here and there were dark areas corresponding to the site of alterations. The circumference of right arm was 21.5 cm.; of the left, 19 cm. The respiratory system was normal. After 19 applications of the high frequency current for 10 minutes the swelling could hardly be seen; but on palpation the bone was felt still thickened for about an inch above the elbow-joint. The circumference of each arm was 19 cm. A radiograph showed that the dark areas had much diminished, though the contour of

the bone remained the same. The patient was able to work without inconvenience. Subsequently two small sequestra were shed. A year after treatment the right and left humerus were of the same circumference. On palpation, however, there was some thickening of the bone on the right side.

This case is less striking than the preceding ones, but there is no doubt that the treatment produced considerable improvement. The writers think their results should encourage others to employ this treatment. They point out the great value of the current in checking the muscular atrophy, which is so pronounced in tuberculosis of bones and joints.

Urotropine as an Intestinal Disinfectant.—W. F. Loebisch (*Wien. Med. Presse*, July 7, 1901, p. 1273) discovered accidentally that the urine of a man on a mixed diet contained no indican (potassium indoxyl-sulphate) during the administration of from $7\frac{1}{2}$ to 15 gr. of urotropine daily for posterior urethritis. Further experiments showed conclusively that taking the amount of indican present in the urine as an indicator, urotropine in doses of from 15 gr. to a drachm diminished the products of the intestinal decomposition of albumins in healthy subjects. Though the bactericidal action of urotropine on the *B. coli* and *B. typhosus* when present in the urine is now generally recognised, its inhibitory action on intestinal putrefaction has been overlooked. Incidentally the writer shows that the indoxyl-sulphates are excreted most freely in the morning while the ether-sulphates are found chiefly in urine excreted during the afternoon and evening.

SURGERY.

Acquired Deaf Mutism ; Rapid Recovery of Hearing and Speech on Removal of Cerumen.—Mayo Collier, M.S. (*Med. Press and Circular*, Jan. 15, p. 49).—A girl, aged 9, was sent to hospital because she was apparently deaf and dumb. The mother stated that early in life she was bright and intelligent, and not unlike her other children, whose hearing and speech were good. At about the age of 3 she appeared to be deaf, and the condition had slowly increased. Simultaneously the power of uttering intelligible sounds diminished until the vocabulary was limited to a few words such as "mammy," "more," and "pese."

On being spoken to in a loud voice she answered no questions and uttered no sound, but stared from the questioner to her mother, expressive of inability to understand. No response was elicited when the bells of a repeater watch were suddenly struck close to the ear. The pharynx was normal. The nose was considerably obstructed by two very large lower turbinals. In each ear, in contact with the membrane, was a hard, inspissated mass of cerumen, which was removed. The membranes were retracted and somewhat opaque. Politzer's bag was used, and a wash ordered for the nose.

Afterwards she apparently heard and attempted to converse and make sounds. The bells of the repeater watch when struck behind her caused her to move. On showing her a small bronze lion she uttered the word "dod," and on leaving said, when requested by the mother, "Goo bi." Subsequent improvement in hearing and speech has been remarkable.

Deaf mutism does not imply that the subject is totally deaf and totally dumb. A deaf mute cannot hear so as to communicate by speech but is seldom stone deaf and absolutely dumb. More than half the cases are acquired,

and curiously on the authority of Bezold, absolute deafness is more common in the acquired cases than in the congenital. About 60 per cent. of deaf mutes have some hearing power. Many children classed as congenitally deaf hear to a greater or less degree, but not sufficiently to allow them to acquire the power of speech.

Direct Introduction of Purgatives into the Intestine in Operations for Septic Peritonitis.—Charles A. Morton, F.R.C.S. (*Brit. Med. Jour.*, Jan. 11, p. 77).—The injection of saline purgatives into the bowel during operations for septic peritonitis has been practised by some American surgeons (McCosh, *Annals of Surgery*, 1897, Vol. xxvi, p. 691; Weir, *Annals of Surgery*, 1897, Vol. xxvi., p. 236). The injection is usually made into the small intestine. Mr. Maylard, of Glasgow, has also advocated its use combined with evacuation of the intestinal contents (*Brit. Med. Jour.*, 1899, i., p. 843). The writer tried the method in one case of operation for general purulent peritonitis. With an exploring syringe he injected 2 drachms of sulphate of magnesia, dissolved in a little water, into the jejunum, and closed the puncture with a Lembert suture. The patient, a child, aged 8, was desperately ill at the time of operation and did not live many hours, but a copious action of the bowels took place on the operation table, and continued for some time.

Jonathan Hutchinson, jun., F.R.C.S. (*ibid.*).—When operating in cases in which the chief danger lay in the distended and paralysed condition of the intestines it occurred to the writer to directly introduce a purgative into the intestine. He used a solution of half an ounce of magnesium sulphate in water, and injected it high into the small intestine. A couple of

fine silk stitches applied after the cannula was withdrawn prevented any possibility of extravasation. Mr. Hutchinson suggests that the aperient should be injected into the small intestine rather than the large. The trouble lies often in the distended condition of the former; a turpentine enema will relieve the large intestine. It is improbable that an aperient injected into the cæcum, as Mr. Sheild advises (*vide infra*) can relieve the distension of the small gut. The use of a fair-sized trocar and cannula instead of a small syringe is advisable, as by the former the intestine can be largely emptied of gas, etc., before injecting the saline solution.

A. Marmaduke Sheild, M.B., F.R.C.S. (*ibid*, Dec. 28, p. 1864).—In many cases of septic peritonitis the patient's life depends on the possibility of overcoming the paralytic obstruction and on the free evacuation of gas and fæces. The worse the case the more difficult is this to bring about, since the patient vomits everything he takes. The writer has used this method only in cases of perforative appendicitis. The nozzle of a small syringe (the hydrocele-injecting syringe is convenient), is introduced into the "stump" of the appendix and the solution directly thrown into the cæcum. Three drachms of magnesium sulphate, 10 drops of tincture of nux vomica, and a drachm of glycerine in an ounce of water is the formula. Two hours afterwards a turpentine enema is given. The result was excellent. The writer has employed this method with surprising results in 5 serious cases of septic peritonitis from perforative appendicitis.

long was found immediately above and parallel to Poupart's ligament on the left side. Soon after admission he vomited, and the straining caused further hæmorrhage. Only a little blood escaped from the wound. He was collapsed and very pale, and the pulse was rapid and small. There was a bulging of the abdominal wall over the left iliac fossa, and on palpation firm resistance could be felt there, reaching to the level of the superior iliac spine. The pulsations of the left posterior tibial artery could be felt at the ankle but they appeared smaller than those of the right.

The wound was enlarged in both directions. In the aponeurosis of the external oblique, a wound $\frac{3}{4}$ in. long, and $\frac{1}{2}$ in. above and parallel to Poupart's ligament was found. It was enlarged outwards and a large blood-clot found occupying the iliac fossa outside the peritoneum, which was uninjured. The clot was scooped out and a wound of the external iliac artery on the antero-internal aspect became evident. A small clot projected through it. The wound was fully $\frac{1}{2}$ in. long, and ran parallel to the original skin wound, and therefore rather obliquely to the axis of the artery, so that, owing to the contraction of the muscular coat it had an elliptical shape. While the aorta was compressed the writer removed the clot from the wound in the artery, and then sutured it with catgut. A decided kink was produced in the artery, but no leakage took place when the aorta was released. The iliac vein was uninjured though its sheath was much bruised, and the knife must have passed right down between the two vessels. The wound in the artery was situated about $\frac{1}{2}$ in. above the origin of the deep circumflex iliac which was tied. When the patient was put back to bed no difference in the tibial pulses could be detected at the ankle. The wound healed aseptically. On July 14 there was no sign of yielding of the arterial coats, or atrophy of the limb, the measurement being the same on each side. The patient considered the limb "as strong as ever."

Wound of the External Iliac Artery Treated by Suture.—J. Hogarth Pringle (*Scottish Med. and Surg. Jour.*, Oct., p. 320).—A man, aged 45, who had been stabbed with a pocket knife, and had lost a large quantity of blood, was brought to hospital on Jan. 13. The hæmorrhage had ceased, but his clothes were soaked with blood. A small wound about $\frac{3}{4}$ in.

When suture of a large artery is possible it is a better operation than ligation. The risk of gangrene is reduced to a minimum, and there is no wasting of the part supplied, and possibly those peculiar sensations of weakness, and the vague pains which patients complain of, often for long periods after ligation of an artery will be avoided.

Macrodactyly.—M. Sattler (*Wien. Klin. Rundschau*, Jan. 19, p. 44).—Busch divides cases of congenital partial gigantism into (a) complete, in which the hypertrophy affects all the tissues of a whole or at least half a limb uniformly, and (b) partial, in which the hypertrophy is limited to certain fingers or toes, and other parts of the hands or feet. The latter are sub-divided into (a) those in which the hypertrophy affects all the tissues—soft parts and bones—uniformly, and (b) those in which there is hypertrophy of the bones and subcutaneous fat, the irregular deposit of which disfigures the part with unsightly swellings. According to Fischer there is a third group in which the enlargement of the limb depends entirely on diffuse hypertrophy of the soft parts, the bones being normal. Typical examples of these groups are, however, rare, and most cases present some of the features of each.

CASE 1.—A Bosnian girl, aged 16, had at birth an enormously developed right middle finger. This grew more rapidly than the others. For 5 years the right index finger had also enlarged rapidly. No family history of malformation or gigantism was obtainable. The girl was otherwise well developed. The right middle finger measured $7\frac{3}{8}$ in. in length, and $5\frac{1}{2}$ in. round the proximal phalanx, $6\frac{1}{8}$ in. round the middle phalanx, and $6\frac{3}{8}$ round the nail. The normal left middle finger measured only $4\frac{3}{8}$ in. in length, and $2\frac{3}{8}$ in. round the first interphalangeal joint. There was a sharp curve at the right first interphalangeal articulation, so that the end of the middle finger rested on the middle and terminal phalanges of the ring finger (Fig. 1).



FIG. 1.

The bones could be felt on the dorsal surface, but not on the flexor owing to hypertrophy of the soft parts. Active movements were possible only at the metacarpo-phalangeal joint. The right index finger measured $4\frac{3}{8}$ in. in length, and $4\frac{1}{8}$ in. round the terminal phalanx. At the first interphalangeal joint it was abducted, so that the first and second fingers enclosed an angle of 160° (Fig. 1). Active movements were possible at the metacarpo-phalangeal and first interphalangeal joint. The middle finger was amputated just above the head of the first phalanx, with good results as regards appearance and utility.

CASE 2.—A male gipsy, aged 24, had enormous right index and middle fingers, combined with an abnormal development of the whole right hand. There was no family history of deformity, and the rest of the body was normal. The circumference of the right hand at the middle of the metacarpal bones was $10\frac{1}{8}$ in., of the left $8\frac{3}{8}$ in. The thumbs, ring, and little fingers were equally developed on both hands. The right index finger was only $\frac{1}{2}$ in. longer than the left, but in circumference the excess was more marked.

The right middle finger measured $6\frac{1}{2}$ in. in length, the left $4\frac{1}{4}$, and the circumference of the right was about double that of the left (Fig. 2). On the palmar surfaces of both hypertrophied fingers, and in the right palm, the soft parts were abnormally developed (Fig. 3). Active movements of the middle finger were possible only at the metacarpo-phalangeal joint. In the index finger the first interphalangeal joint also could be flexed. Above the wrist was an easily compressible tumour of the size of a pigeon's egg covered with normal skin. It appeared to be situated between the tendons and the subcutaneous cellular tissue, and was probably a lymphangioma. The middle and terminal phalanges of the middle finger were disarticulated at the first interphalangeal joint.

The skin and subcutaneous fat of the amputated fingers were abnormally adherent. At the finger tips the skin was thin and distended by an accumulation of fat, which resembled lipomata. The flexor tendons were abnormally developed.

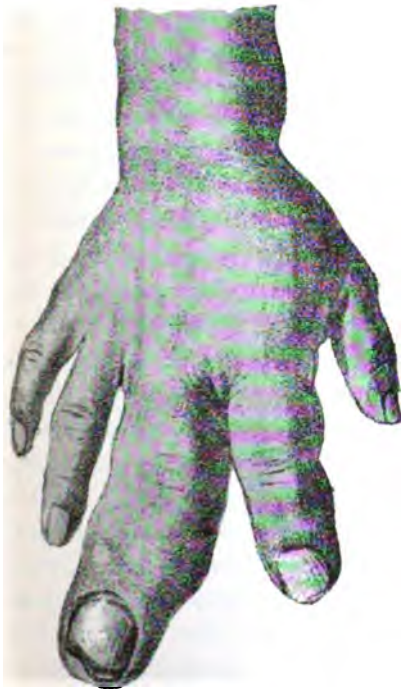


FIG. 2.

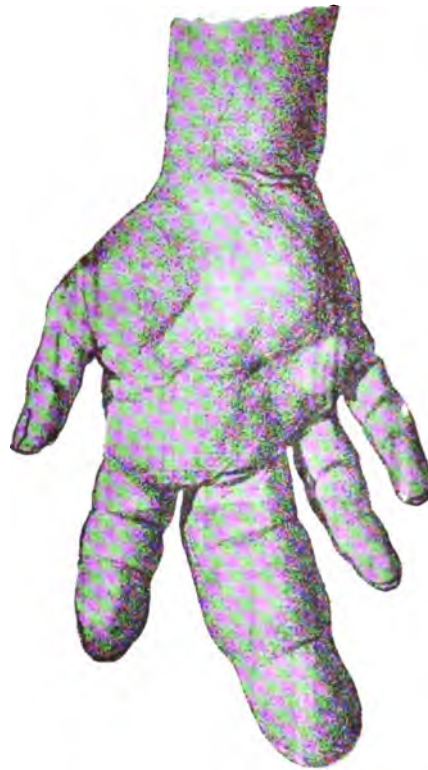


FIG. 3.

The enlargement of the bones chiefly affected the epiphyses, which, as is usual in such cases, were enlarged and nodular, while the diaphyses were comparatively slender. The digital arteries were enlarged proportionately to the general hypertrophy. No inflammatory signs were present. Both cases belong to Busch's second group of cases with partial hypertrophy and lipomatous deposit.

Gigantism is more common in the right hand than in the left (15 to 12). Two cases have been reported in which several members of the same family were affected, but with these exceptions heredity appears to play no part.

Skin Changes and Carcinoma.—Gebele (*Münch. Med. Woch.*, Jan. 28, p. 139).—Several writers in Germany have recently called atten-

tion to the frequency of small, bright red cutaneous angiomas, which do not disappear entirely on pressure, in patients suffering from cancer ("REVIEW," Vol. III., p. 749). They are situated chiefly on the trunk and occasionally on the limbs, but practically never on the hands and feet. Prof. Leser maintains that they are rare in any other class of patients, and that their appearance before old age is of diagnostic importance. (The angiomas in question are probably none other than those long known in England as "Campbell de Morgan's spots"). The writer has tested their diagnostic worth in 21 cases of carcinoma and 200 cases of other diseases. They were found in 11 of the cancer patients, and in 86 of the other 200. They were not more frequent in advanced than in middle age, since of the 11 patients with carcinoma only 5 were over 50, and of the 86 others 51 were under 50. Though not more frequent they tend to be more numerous in persons over 50. The greatest number present was 48—in a man with scoliosis, hydrocele, and varicocele. The writer concludes that angiomas are of no diagnostic value. They are probably a degenerative phenomenon comparable to *nævi pigmentosi*, xanthoma, lentigines, papillomata and other senile changes. That they are frequent in carcinoma—a disease rare in youth—is, therefore, not surprising. The onset of cancerous cachexia, however, may favour their development. That they are a sign of tissue degeneration is also rendered probable by their frequent concurrence with non-cancerous tumours. Except in one patient with sarcoma the writer found them in all the patients with tumours which he examined. These included 5 sarcomata, 1 chondro-sarcoma, and 6 benign tumours (1 lipoma, 1 neuro-fibroma, 2 uterine fibroid tumours, and 2 ovarian cystomata). The following case emphasizes the diagnostic worthlessness of angiomas.

A man, aged 58, was operated on for the radical cure of bilateral femoral hernia. Thirteen days later blood was passed with the *fæces*, and there were dyspeptic symptoms. The presence of 37

cutaneous angiomas raised the suspicion of carcinoma of the stomach. Hæmorrhage continued and proved fatal a week after its appearance. Post mortem the source of the hæmorrhage was found in a duodenal ulcer which had eroded the pancreatico-duodenal artery. There was no carcinoma.

Perforation of a Gastric Ulcer: Recovery after Operation 4 Days Later.—Wiesinger (*Deutsche Med. Woch.*, Jan. 30, p. 82).—A man, aged 36, had had gastric pain and vomiting without hæmatemesis for 3½ years. On May 15 violent epigastric pain appeared. There were nausea, vomiting, and collapse. He was treated with opium for 3 days, during which no flatus or *fæces* were passed, and the pain and tympanites increased. On May 19, fully 4 days after the perforation, he entered hospital. There were mental dulness and delirium, and the condition was desperate. An incision was made from the costal arch nearly to Poupart's ligament along the outer border of the right rectus muscle. On division of the peritoneum a quantity of brown foetid pus mixed with flakes of fibrin escaped. The whole abdominal cavity was full of this fluid, which was so abundant between the liver and diaphragm that the right lobe of the liver was depressed. The peritoneum was irrigated with several litres of normal saline solution at 104°. A perforation of the size of a bean was then found on the lesser curvature of the stomach, midway between the pyloric and cardiac orifices. The surrounding tissues were indurated, and the edges of the perforation so friable that direct suture was impossible. The opening was, therefore, closed by the suture of a neighbouring area of healthy gastric wall over it. A Mikulicz drain was placed over it, and the ends were conducted outside the abdominal wound, which was then closed. The peritonitic symptoms decreased, and flatus was passed. On the second day there were pyrexia, and suppuration of the abdominal wound (coli-phlegmonous infection from the

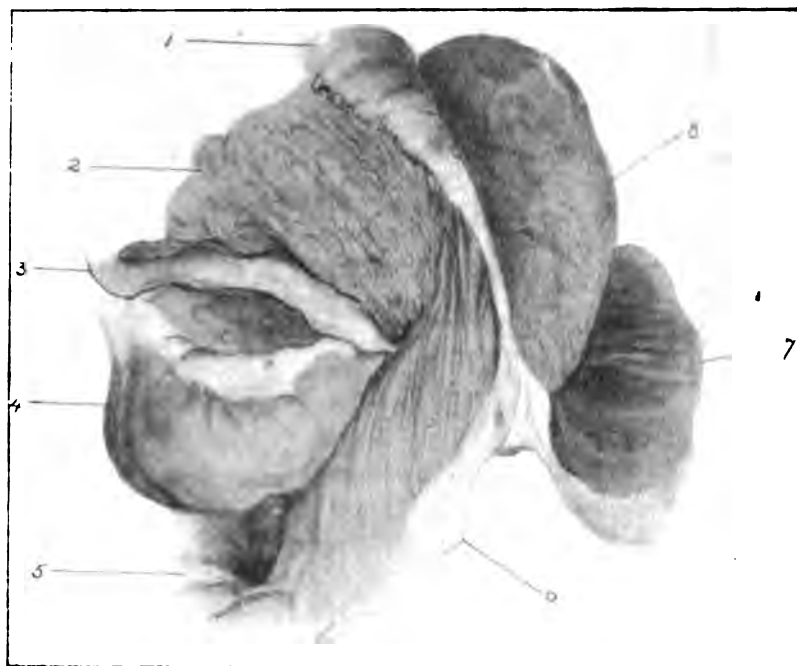
peritoneum). The sutures were therefore removed on May 25, so that the intestines, which were covered with pus and matted together, presented at the wound, which was closed as well as possible by strapping. The general condition improved, the tampon over the ulcer was removed, and the intestines became covered with granulations. On June 6, during defæcation, several large coils of intestine became prolapsed through the abdominal wound. These were returned under an anæsthetic, and the edges of the wound were brought together by 4 Hagedorn's plates. Three days later symptoms of ileus appeared. Neither fæces nor flatus were passed. The coils which presented at the wound were enormously distended, and on being punctured gave exit to a quantity of gas. As the intestines collapsed about 35 oz. of fœtid pus escaped from the upper angle of the wound. The abscess cavity was plugged, and the symptoms of obstruction disappeared. Soon, however, dulness developed at the right base posteriorly, and progressed steadily upwards. A sub-phrenic abscess was suspected, but exploratory puncture was negative. On June 23, however, about 9 oz. of fœtid pus were expectorated, and an exploring needle drew off pus from the right base. The ninth rib was resected, and about 35 oz. of pus were evacuated from a large sub-phrenic abscess just to the right of the vertebral column. Thenceforward convalescence was uninterrupted, appetite and digestion were good, weight increased from 99½ to 134½ lb., and up to Sept. 8 there had been no return of the gastric symptoms. Recovery is very exceptional in general septic peritonitis, if operation is postponed for 24 hours. The following case of perforation of a gastric ulcer, though in a different category, is also exceptional:—

A woman, aged 40, after gastric symptoms had persisted for several months, had a sudden attack of hæmatemesis. Three days later violent epigastric pain and symptoms of peritonitis appeared. There were vomiting, tympanites, and absolute constipation. Operation was refused. After the peritoneal symptoms had lasted 6

weeks there was extreme emaciation, the pulse was 120, the temperature 102.2°. Percussion of the abdomen was tympanitic everywhere, except near the right anterior superior spine of the ileum, where the sharp edge of the liver could be felt. The liver dulness was replaced by a tympanitic note, which extended up to the fourth rib. The writer diagnosed free gas in the peritoneal cavity. A cannula was inserted, and first a quantity of gas was evacuated, then fœtid pus. An incision from the epigastrium to the symphysis pubis disclosed an enormous abscess cavity filled with pus and gas; 5 to 7 pints of fluid were removed. The walls of the abscess were formed by adherent intestines. It was drained from a counter-incision in a right posterior intercostal space. Recovery followed.

Strangulated Hernia through the Internal Oblique Muscle.—C. Sternberg (*Wien. Klin. Woch.*, Oct. 17, 1901, p. 1041).—A woman, aged 61, was seized on June 14 with vomiting and abdominal pain, and thereafter passed neither flatus nor fæces. On June 18 the left flank was found distended by a more or less reniform swelling, which extended from the costal arch almost to Poupart's ligament. It was sharply defined below, but above and towards the middle line was more diffuse. It was hard and smooth and not tender. There was tympanitic resonance over it. The abdomen was slightly distended but not tender. The swelling was said to have appeared before the vomiting, and after an error of diet. Intestinal irrigation brought away flatus and a formed stool, but gave no relief. There were constant vomiting and hiccough. Operation was refused and death occurred on June 22.

NECROPSY.—The tumour was formed by a coil of jejunum about 5 in. long and a mass of œdematous omentum, which lay between the layers of the abdominal wall so as to be covered anteriorly and superficially by the obliquus



1. Obliquus internus. 2. Omentum. 3. Collapsed jejunum below the stricture. 4. Distended coil above the stricture. 5. Internal inguinal ring. 6. Peritoneum. 7. Obliquus externus reflected off the sac. 8. Hernial sac.

externus and posteriorly and deeply by the obliquus internus, the transversalis, and the peritoneum. The sac was formed by the peritoneum and the transversalis fascia which had become invaginated between the fibres of the obliquus internus. The neck of the sac was about $\frac{3}{8}$ in. in diameter and had a smooth sharp margin, but was adherent to the omentum at one spot. It was nearly 3 in. above the inguinal ring (Fig.). Since no morbid change to account for the escape of intestine through an apparently normal muscle could be found, the writer assumes that a blow had ruptured the muscle; but of this there was no history. The hernia was certainly through no preformed opening. The inguinal canals on either side were patent and led into empty hernial sacs.

Such lateral herniæ are rare, and, especially if strangulated, are apt to be mistaken for lipomata or abscesses.

Gangrenous Lymphangitis of the Scrotum in the New-Born.—Robert Lacassi (*Gaz. Hebdom. de Méd. et Chirurg.*, Feb. 16, p. 145).

CASE 1.—A boy, born at term with a vertex presentation, who had been suckled by his mother, developed, when 15 days old, redness of the lower abdomen without any swelling at the periphery. The condition extended to the scrotum and to the penis in a less degree. Red lines were seen on the upper and inner parts of the thighs. The child became fretful, and refused the breast. Next day the redness of the abdomen and thighs had diminished, but the scrotum and penis had increased in size. On the 2 following days the local condition remained unchanged, but the child grew pale and thin, though it had again begun to suck. During the night the scrotal swelling increased, and next day the child was taken to hospital.

The scrotum was as large as that of a child of 10, elastic, and somewhat hard, and varied in colour from red to violet. On the median raphe was an ulcer with swollen raised edges and white floor. The penis was red and swollen. There were inflammatory phimosis and a long semi-circular ulcer on the prepuce. The swelling ceased abruptly at the junction of the scrotum and penis. There were some red streaks on the thighs. The child was pale and emaciated, and its general condition was serious. Incisions were at once made on either side of the median raphe with the thermo-cautery, and the cautery was pushed deeply at various points into the other portions of the scrotum. A waxy white tissue was found, from which some drops of turbid fluid exuded. This tissue was extruded.

The condition improved till the 26th day, when there was œdema of the feet and hands, and redness of the skin. This disappeared on the 29th day. A lumbar abscess then was found, though no joint disease could be discovered. On the 31st day the abscess was opened, and 9 days later the child left hospital. He was brought back after 9 days with an abscess at the left elbow, which was incised, as was also the lumbar abscess, which still persisted. The pus contained streptococci. Four days later there was empyema on the right side, and the pleural space was opened and drained. The pus again contained streptococci. Death occurred the same evening.

CASE 2.—A child was born at term with a vertex presentation. The cord dropped off on the fifth day, but the cicatrization was slow, and there was slight suppuration for 5 or 6 days. Ten days after this ceased the mother noticed diffuse redness in the umbilical region. The skin was œdematous and tense. The child was restless, refused the breast, and seemed in pain. During the following days the swelling spread from the pubic region to the scrotum, which became red. After 8 days the child was taken to hospital.

It was pale, much emaciated, and had a little greenish diarrhœa, a temperature of 102° and

pulse of 140. Nearly the whole scrotum had disappeared, and was represented by a large oval ulcerated surface reaching almost to the base of the scrotum, with bluish, and in some places black, swollen ragged edges, and a whitish floor covered with discharge and partly attached to the inferior aspect of the testicles, which were completely denuded. All round the ulcer the skin was red and œdematous, the redness being continued to the pubes and internal aspect of the thighs. Dressings soaked in oxygenated water were applied, and in 19 days the child was cured. When seen 18 days after dismissal he was fatter, the loss of substance was quite repaired and there was a Y-shaped cicatrix, the stem of which ran up the median raphe almost to the inferior surface of the penis, and the arms of which encircled the lower part of the scrotum. The testicles were absolutely free within the scrotum.

The writers conclude that in both cases the site of infection was at the umbilicus, and the disease spread by the lymphatics to the pubic region and scrotum. The general symptoms were much less severe than in a case of erysipelas, but gangrene set in quickly. In similar cases the treatment should be immediate and the prognosis guarded.

Sciatica, Meralgia, and Flat-Foot.—

Prof. Pal (*Wien. Klin. Rundschau*, Jan. 5, p. 1).—

In all the 20 cases of meralgia, (paræsthesia of the area supplied by the external cutaneous nerve of the thigh) and in many of the cases of sciatica which have come under the writer's care there was pes valgus. The patients were mostly elderly men or women, who had recently increased in weight, and whose occupation necessitated prolonged standing on hard or asphalted floors; in younger women pregnancy was a frequent cause of the increased weight. In some cases the flat foot had appeared about puberty, but had given no trouble for years, until the increased weight and standing produced an exacerbation. In others there had

previously been no flat foot. Since flat feet in middle life are seldom looked for, and the symptoms are not so typical as in youth, they are usually overlooked. The intensity of the meralgia is proportional to the degree of valgus, and treatment directed to the latter improves or cures the former. In patients with meralgia the pain often radiates over the sacrum. In other cases there is no meralgia, but the pain is localised in the gluteal muscles, or, more rarely, in the sacral or lumbar regions, so that it is often mistaken for sciatica. The sciatic nerve is but slightly, if at all, tender, and there is acquired talipes valgus (*talipes valgus staticus*). The pains are worst during standing, and improve or disappear on lying down, or on treatment of the flat foot.

CASE 1.—An officer in the reserve had right talipes valgus for years, which was satisfactorily corrected by a suitable pad. After a month's drill, during which time he had worn no pads, he had diffuse pains in the right gluteal region, which were diagnosed as sciatica and slight meralgia. The sciatic nerve was not tender.

CASE 2.—A dancer, aged 28, had flat feet since 15. At 26 she became pregnant and the valgus symptoms returned with painful paræsthesia on the outer side of the thigh. The pains were worse while she was on the stage, where she was unable to wear the pads.

CASE 3.—A man, aged 45, who had had attacks of right renal colic for some years developed symptoms which were diagnosed as sciatica. The right lumbar and gluteal region were painful, but the sciatic nerve was not tender. The writer diagnosed calculus in the right renal pelvis, and ordered a course at Carlsbad, which included

local treatment. Afterwards it was discovered that there was marked flat foot on the left side, and that the right plantar arch disappeared when unusual weight was thrown on it. When suitable pads were worn the "sciatica" disappeared almost completely.

CASE 4.—A cook began to increase in weight at the age of 20. Shortly afterwards the left foot became painful. At 24 she was pregnant and the difficulty in walking increased. At 26 there were such pains in the left gluteal region that employment was abandoned. There was slight hypæsthesia over the outer side of the left thigh. The sciatic nerve under the glutei was slightly tender. The pronators of the left foot were contracted. The foot had a distinct arch when at rest, but became markedly flat on standing. The right foot was normal. Rest in bed, strapping the foot, and fomentations over the tender tendons produced rapid disappearance of the pain, and walking became easy with flat-foot pads.

In the treatment of flat foot, pads are contra-indicated until the painful contractions of the tendons have been overcome by reduction of the deformity, or by rest, fomentations, massage and exercises. Absolute rest in bed is essential. The deformity should be removed—in slight cases, by strapping the foot, in more severe by orthopædic methods. A transverse section of the pads should be of a wedge shape, and though the greatest thickness is under the arch they should extend from the heel to the toes and thoroughly supinate the foot. Pads are well borne only by those who have some remaining arch.

In all cases of painful walking, even if the pain is far removed from the foot, the patient's feet should be examined while standing.

OBSTETRICS AND GYNÆCOLOGY.

Repeated Ectopic Pregnancy.—J. A. C. Kynoch, M.B., F.R.C.P.Ed. (*Scottish Med. and Surg. Jour.*, Feb., p. 120).—Repeated ectopic pregnancy is not so rare as was supposed. (See "REVIEW," Vol. II., pp. 13, 95, and Vol. III., p. 320). Varnier finds that in 177 cases of ectopic gestation treated by operation there were 17 subsequent pregnancies. Four were extra-uterine—a proportion of 1 ectopic to 3 normal pregnancies. He reports a case in which ectopic gestation was supposed to have occurred 3 times in the same patient. Haig Ferguson, from a study of published cases, states that in every 100 cases of extra-uterine pregnancy there are 5 cases of both tubes being involved simultaneously or successively. Recurrence may take place in the same tube, as in the cases reported by Taylor and Coe. The latter found in the same tube a fresh 3 months foetus and a lithopædion, representing a pregnancy which had occurred 2 years previously. In all other reported cases recurrence took place in the opposite tube. Dührssen operated in a case of incomplete tubal abortion occurring on both sides within an interval of 20 months. Tait reported a case of tubal pregnancy operated on at the third month followed by a normal pregnancy, and still later by interstitial gestation on the opposite side. In Haig Ferguson's case the first tubal pregnancy, which corresponded to 4 months, was not treated by operation, and terminated in the formation of a lithopædion. Four years later a 3 months ectopic pregnancy occurred in the opposite tube, both appendages being successfully removed at 1 operation. Mackenrodt reports the case of a patient, aged 32, with all the symptoms of ectopic pregnancy on the right side, who refused operation. Similar symptoms, pointing to left tubal pregnancy, appeared 18 months later. This and the right tube were removed. In the

latter foetal bones were found. Edgar published a case in which both pregnant tubes ruptured at the seventh and eighth week, and were successfully removed at one operation. In the following case the diagnosis of the first pregnancy rested on clinical grounds:—

A woman, aged 30, was admitted to hospital on Jan. 19, 1900, complaining of pain in the left iliac region of 1 month's duration. She had been married 14 years, and had 6 children. The first 2 were still-born. Menstruation was always regular. The last period occurred 10 weeks before admission. Six weeks later she complained of sudden severe pain with irregular hæmorrhagic discharge. The pain was aggravated by movement of the bowels. The abdomen was soft. The left lower quadrant was very tender, and an ill-defined resistance was felt in it. The uterus was somewhat fixed and displaced to the right, and a swelling was felt in the left fornix, which under chloroform was found to be of the size of an orange, and appeared to be in the broad ligament near the uterus. There was also felt a smaller swelling behind the uterus, which was regarded as a prolapsed ovary, and probably the cause of the pain on defæcation. Hæmatoma in the broad ligament from rupture of a 6 weeks tubal pregnancy was diagnosed. It was decided to allow absorption to take place. After rest in bed for 7 weeks only a slight thickening could be felt through the left fornix.

During the subsequent 18 months the patient enjoyed good health, menstruation being regular. On Sept. 5, 1901, she was readmitted, complaining of pain in the right iliac region of 5 weeks duration. She had passed her expected period 1 week when the pain began, and it was followed by continuous hæmorrhagic discharge. She said she passed 2 large pieces of membrane a few

days after the pain began. Relief followed for 2 days, but the pain recurred at intervals till readmission. Under chloroform the uterus was found to the front, movable and slightly enlarged. Posteriorly and to the right of the uterus was a fixed tender swelling about as thick as the forefinger. On rectal examination it felt like an inflammatory thickening of the uterosacral ligament, and therefore operation was postponed. She was kept in bed for 6 weeks, during which there were intermittent attacks of pelvic pain, with irregular hæmorrhagic discharge. As the swelling did not diminish the condition was regarded as tubal gestation.

Laparotomy was performed on Oct. 5. The right Fallopian tube was adherent and distended to the thickness of the thumb. It was removed with the ovary. The left appendages were adherent, and the upper part of the broad ligament was slightly thickened. The left tube and ovary were not removed. Recovery followed. The removed tube contained blood-tinged fluid, and numerous fine branching villi.

Evidently a 6 weeks ectopic gestation in the left tube, ruptured into the broad ligament, forming a hæmatoma, which became absorbed, and was followed by right tubal pregnancy.

Full-Time Extra-Peritoneal Gestation Removed after Retention for 5 Years.—D.

Berry Hart, M.D. (*Jour. of Obst. and Gynæcol.*, Feb., p. 129).—A married woman, aged 29, was admitted to hospital complaining of swelling of the abdomen of about 5 years' duration. A year after marriage she thought herself pregnant. Amenorrhœa was followed by morning sickness, which persisted till the middle of the fifth month, when quickening was felt. The breasts rapidly enlarged and filled with milk, and a swelling occupied the lower half of the abdomen. At the end of the seventh month a fright caused violent palpitation; henceforth foetal movements were not felt. The abdomen continued to enlarge until the end of the eleventh month after

the last menstruation. It was then so swollen that she would not go out. A severe flooding occurred. No account of the discharge of a decidua could be obtained. The flooding lasted 12 hours. The abdominal swelling much diminished, leaving, however, a marked enlargement. This had remained *in statu quo* for the last 4 years, during which she enjoyed good health and menstruated regularly. There was no sudden attack of pain in the early months. She came to hospital on account of recurring pain, due, she thought, to an accidental blow.

The breasts were flaccid and soft, as if they had been larger previously; the areolæ were large and dark, and Montgomery's tubercles were present. The lower abdomen showed well-marked *striae gravidarum*. A tense and elastic rounded swelling rose out of the pelvis, reached as high as the umbilicus, occupied the whole of the hypogastric and part of the iliac and umbilical regions, and inclined slightly to the left. It was a little tender where the blow was sustained. Fluctuation could be made out, but there was no thrill; the cervix was high, and in the left and posterior fornices some bulging was felt; in the posterior fornix a peculiar crepitation was noticed, such as is felt in subcutaneous emphysema. The os externum was apparently nulliparous. The uterus appeared to be of normal size, and felt as if the fundus was continuous with the anterior wall of the abdominal cyst.

Retained extra-uterine gestation was diagnosed because of the symptoms of early pregnancy, the spurious labour (although the discharge of a decidua was not observed), and the subsequent shrinking of the tumour. The physical signs were those of a cyst lifting the posterior laminæ of the broad ligaments and the peritoneum on the posterior wall of the uterus. The crepitus seemed to show that there was a connective tissue base to the cyst, and that gases might be passing from bowel to cyst.

Laparotomy revealed a bulging cyst, the surface of which was evidently peritoneal, with a somewhat thin wall in which ramifying vessels

could be seen. The anterior wall of the cyst and the fundus uteri were continuous. After opening the cyst foetal bones were felt, and a thick inodorous brown fluid escaped. The bones of a full-time foetus were removed piece by piece. Exploring the cyst with the finger, no trace of placenta, cord, or membranes was discovered. The sac could not be enucleated or removed as a whole, and therefore the opening was stitched to the abdominal wound, shutting off the peritoneum in the usual way. The sac was packed with iodoform gauze wrung out of weak biniodide of mercury solution, and the end brought out on the abdominal surface. Recovery was uninterrupted. The discharge remained scanty and free from odour. One metatarsal bone was passed by the sinus.

The gestation had begun in the left tube, developed between the layers of the left broad ligament, raised the peritoneum from the posterior wall of the uterus, and insinuated itself between the layers of the right broad ligament. It thus practically raised the posterior pelvic peritoneum, and was, in Taylor's nomenclature, "posterior tubo-ligamentary," or it might be described as an "intact extraperitoneal form with posterior lifting of peritoneum." An extraordinary feature was the almost entire absorption of the soft tissues. The skin, muscles, viscera, and brain had become disintegrated or had disappeared.

umbilicus. The foetal head was above the pelvic brim, the back directed towards the left. Schleich's eucaine solution was injected for 6 inches along the scar, which was incised, and the uterus was opened for a length of 4 inches, the wound being afterwards enlarged a little with scissors. The child was delivered by the head in 75 seconds; the placenta and membranes were removed in $2\frac{1}{2}$ minutes from the commencement of the operation. The uterus was stitched up with deep and superficial silk sutures (the deep ones missing the endometrium) and the abdominal wall was closed with through stitches of silkworm gut and buried fascial stitches of fine silk. Owing to the adhesion of the uterus to the abdominal wall from the previous operations, the peritoneum was only slightly opened at the upper and left part of the incision. The whole operation occupied 25 minutes till the dressing was applied.

The first part of the operation (incision and delivery) was practically painless; the sewing up the wound in the uterus was quite painless, but there was a good deal of pain during the abdominal stitching, especially in sewing up the fascia. The patient was sick once during the operation. Afterwards she was pale, and the face was covered with a cold sweat. The child weighed 6 lb. 13 oz. Convalescence was uninterrupted.

Sufficient attention has not been called to the simplicity of the repeated operation of Cæsarean section. If the uterine wound has been made in the usual position the anterior surface of the uterus usually adheres to the abdominal wall, and at a subsequent operation the child may be delivered without, or with but slight opening of the general peritoneum. This reduces the risk of sepsis and simplifies the recovery. "Porro's operation" has, in the 25 years since it was instituted, been performed 1,097 times, with a total maternal mortality of 24·8 per cent., and in the last 10 years of 15·4 per cent. Various devices to sterilize the patient—tying the tubes, cutting the tubes, excising portions of the tubes, covering

Cæsarean Section Performed for the Third Time on the same Patient Under Local Anæsthesia.—Herbert R. Spencer, M.D., B.S., F.R.C.P. (*Jour. of Obstet. and Gynecol.*, Feb., p. 138).—A dwarf, aged 27, with a $2\frac{1}{2}$ -inch conjugate diameter, on whom the writer had twice performed Cæsarean section, was admitted to hospital on March 17. Cæsarean section was performed for the third time on April 3, within a few days of term, labour-pains being present. The scar was $6\frac{1}{2}$ inches in length, extending downwards from 1 inch above the

the tube stumps with peritoneum—have been tried, and have mostly been found unreliable, and even dangerous. They also necessarily leave a seam which may favour intestinal adhesion and obstruction. There appears, indeed, to be no certain way of sterilizing a woman except the removal of the ovaries, which entails well-known disadvantages. During the last few years there has been a marked tendency towards Cæsarean hysterectomy. In the writer's opinion, although that operation is of great value in fibroids, uncontrollable hæmorrhage, cancer, infected uterus, etc., it should not in simple cases of pelvic contraction be the operation of election and displace the conservative operation. The evidence at present shows that repeated Cæsarean section is not more dangerous than the first operation (the writer believes it is less), and until it has been shown that the mortality of Porro's operation is considerably less than that of the conservative operation, and that rupture of the uterus in a subsequent pregnancy is not of infrequent occurrence and is unavoidable by proper care, the conservative operation without sterilization is the operation of election in simple cases of contracted pelvis.

Schleich's method of infiltration anæsthesia is one of the greatest advances of surgery during recent years, but it is more suited for small (or at least superficial) operations on the limbs and trunk than for those involving much manipulation within the peritoneal cavity. The patient must possess resolution, otherwise she will suffer from mental shock. This case shows that the child may be delivered practically without pain, and the mother's subsequent condition is certainly better than after a general anæsthetic. In this case the child was more vigorous at birth than the writer has ever seen in Cæsarean section under ether anæsthesia. The suturing of the abdominal wall, especially of the fascia, is painful, and, as this pain is due apparently in part to traction on the fascia and peritoneum, it seems to be unavoidable. But a patient who is willing to tolerate this pain will

recover better after local than after general anæsthesia. Moreover the child is not asphyxiated as it often is when a general anæsthetic is employed. The pain during the stitching of the abdominal wall could, of course, be prevented by giving ether during that part of the operation. For a patient who is at all nervous general anæsthesia throughout is preferable.

See also "REVIEW," Vol. IV., p. 704.

Triple Tubal Pregnancy.—Wilmer Krusen, M.D. (*American Medicine*, Jan. 4, p. 18).—A married woman, aged 34, was seen in consultation on June 19, 1901. She had good health until 8 years previously when, after a miscarriage, she had an attack of uterine pain in the back and other evidences of a pelvic inflammatory condition. Her first pregnancy had resulted in the birth of a full-term child. Five miscarriages followed and the last normal pregnancy occurred about 2 years before. When first seen by her family physician on June 12, she had not menstruated for over 6 weeks. The last menstruation had been very scanty, and the flow lasted only a day. She gave a history of having been seized with acute abdominal pain after making a false step from the curb to the street; faintness followed. For 2 days pain in the abdomen persisted, and marked tenderness was present. However, at the end of the second day her condition was fairly good. Later the temperature rose, severe abdominal pain and tenderness returned, and the symptoms increased in intensity.

The uterus was enlarged and softened; a general boggy sensation was present in the posterior and lateral vaginal fornices, and the temperature was about 2° above the normal. Ruptured ectopic gestation with possible infection of the intra-peritoneal hæmatocele was diagnosed. Immediate operation was advised, but arrangements could not be made until 2 days later. When the peritoneum was opened much dark fluid blood escaped. The abdomen was filled



with masses of black clot. The first handful brought out had upon it a part of the ruptured tubal sac and 3 fœtuses. The gestation had occurred in the right tube. The rupture did not involve the cornu of the uterus, which was slightly enlarged and displaced backwards. The left tube was inflamed and adherent, but intact. The ruptured sac with the clots was quickly removed. There was much shock, and only with the aid of intravenous transfusion could the operation be completed. The abdominal cavity was thoroughly irrigated with normal saline solution and a large quantity was left therein. An iodoform gauze drain was introduced and the upper part of the incision closed. At the conclusion of the operation, in spite of large doses of strychnine and atropine and saline transfusion, the pulse was only just perceptible. The temperature on the second day was 104.6° with a pulse of 140. Death from peritonitis occurred on the fourth day. The three fœtuses were perfectly formed and corresponded to the second month of gestation. (Fig.)

Many cases have been reported of combined intra- and extra-uterine gestation, and several cases of double ectopic gestation. But the only case similar to the present that the writer has

been able to find recorded is one reported by Sanger, of Leipsic, of intra-mural twin pregnancy at the point of entrance of the tube into the uterus, while at the abdominal end of the same tube was another ovum, the whole being an example of triple unilateral ectopic gestation. The case now reported may be classified as a true unilateral triple tubal gestation.

Fatal Entry of Air into the Veins of the Puerperal Uterus.—Fritz Sengler (*Münch. Med. Woch.*, Feb. 4, p. 185).—Entry of air into the veins of the puerperal uterus is a rare but fatal accident. In most of the cases recently reported there has been placenta prævia. In the following case air entered during manual extraction of the placenta.

A woman, aged 42, had had 5 labours, in all of which the placenta was removed manually. There was a flattened rickety pelvis, and the forceps had generally been required. In the sixth labour the face presented in the second position. The child was born naturally after the pain had lasted 17 hours. Three hours after the birth of the child there was considerable hæmor-

rhage, and expression of the retained placenta was attempted, both with and without chloroform. It failed, and the hæmorrhage became alarming. The placenta, which was situated on the anterior wall, and was adherent except at its left border, was then removed manually. The woman was in the horizontal dorso-sacral position, with flexed thighs. An intra-uterine douch of a 1 per cent. lysol solution was given. Hæmorrhage almost ceased, and the previously relaxed uterus began to contract. Hypodermic injections of ergotine and of normal saline solution were administered, but before the saline injection was completed the pulse became suddenly almost imperceptible. There were restlessness, jactitation, and extreme dyspnœa. On the supposition that the symptoms were due to a slight return of hæmorrhage the uterus was plugged with gauze. In spite of stimulants death occurred 30 minutes after removal of the placenta. Fifteen minutes after death Dr. Benckiser diagnosed air-embolism, on the ground that the cardiac dulness was replaced by tympanitic resonance.

NECROPSY.—The skin was pale, but not waxy as in death from hæmorrhage. The intestines and stomach were distended. The uterus was relaxed, and of the size of a man's head. The heart, especially the right ventricle, was tympanitic to percussion, and on being squeezed crackled as though air bubbles were moving under the fingers. The right ventricle and pulmonary artery were full of dark blood, foamy from admixture with air. The left ventricle contained a small quantity of dark blood with a few air bubbles. The uterine veins, the vena

cava inferior, and every vein arising in the pelvis which was not connected with the digestive track, were distended with foamy blood. The portal vein and the liver contained dark but not foamy blood. The uterine wall was uninjured, but bubbles of air could be squeezed into its cavity from the veins at either side.

There was no reason to suppose that the air had entered during the administration of chloroform, for there was no struggling. Although the necropsy was performed 22 hours after death, the air in the veins was not due to decomposition, for rigor mortis persisted, and there was no air in the portal system. The amount of hæmorrhage was insufficient to account for death. Pulmonary embolism usually occurs later in the puerperium. By exclusion, therefore, the cause of death was the entrance of air, which must have taken place slowly and continuously since death was not immediate, and the heart had time to drive the foamy blood into the left ventricle.

The air probably entered during the manual separation of the placenta. Aspiration by the uterus during attempts at expression by Credé's method, or the introduction of air by the douche is an improbable cause, though difficult of exclusion. Possibly more than one factor was concerned. Air necessarily enters the uterus when the whole hand is introduced, and the plugging of the vagina by the arm might easily prevent its escape or even drive it into the gaping veins. If, however, this were the sole explanation it is difficult to see why the accident is rare.

NOTES.

THE INCREASE OF CANCER.—In all civilised countries cancer appears to have become more prevalent. The attempt to show that the increase in the number of cases is only apparent and due to more accurate diagnosis has not been successful. The latest statistics given by Dr. John F. W. Tatham, Superintendent of Statistics at the General Register Office, show that during the last 4 years the annual number of deaths from cancer (using the term for all forms of malignant disease) in England and Wales has averaged more than 25,000. The male death-rate from cancer in England and Wales is 672 per 1,000,000 living, whilst the female death-rate is 975. This difference is due to the unequal tendencies to malignant disease of the male and female generative organs. When the deaths from cancerous affections of the ovaries, uterus, and breast are subtracted, the remainder gives a death-rate in females considerably below that in males. Thus, in the 4 years 1897-1900 the death-rate in males from cancer excluding these organs was 645 per 1,000,000, whilst the female rate, with the same limitations, was 568. Official figures show the disquieting fact that the cancer death-rate in males is more than double what it was 30 years ago. In the decade 1861-1870 the average annual death-rate from cancer per million living was 242 in males, and 519 in females; in the decade 1891 to 1900 the rates were respectively 597 and 903. Thus, although at present women

suffer much more frequently than men from cancer, nevertheless the disease during the last 30 years had increased among men much more than among women. Certain German statistics which we have published ("REVIEW," Vol. IV., p. 325) are closely parallel to these: In Hamburg in 1873 the cancer death-rate per million living was 650—461 in males and 840 in females; in 1899 the corresponding rates were 1008, 992, and 1147.

AN ELIZABETHAN CODE OF MEDICAL ETHICS.—"A doctor of Physick in Queen Elizabeth's dayes," whose work "A Detection of some Faults in unskilful Physitians," was reprinted by Robert Record during the Commonwealth epoch, has laid down a rudimentary code of Medical Ethics, which is not without interest, now that 'Deontology' is taking rank as a medical science. The unknown physician complains bitterly of quacks and unlicensed practitioners, and his seven articles "concerning the ministration and use of Physick" are in great part intended to abolish or regulate them. These articles were originally presented to the Bishop of Salisbury by the author, who thus quite honestly, if not unconsciously, sought to subordinate Medicine to the Church, if not also Science to Religion. The first article deals with Physicians, and incidentally seeks to strengthen the position of the Universities. "It were very meet, expedient, and necessary

that no Physician should practice Physick in any Dioces, unless he were first allowed by some University." Failing that—and here the Bishop is again called in—the physician should at least possess sufficient learning to warrant him being "allowed and licensed" by the said Bishop or his Chancellor. Article 2 deals with Surgeons, and sets them a much lower standard than the Physicians. Surgeons need not be academics at all, but, runs the proposed law, "It were good and necessary, that no Chirurgion should practise his Chirurgery unless he could read and write, and had knowledge and experience in the simples belonging to his art." He is in fact a Barber-surgeon, and quite subordinate to the Physician. Indeed he is not to presume to let blood "or undertake any hard cure, without the Physicians counsel, if he may conveniently have it."

Still more of a subordinate is the Apothecary, who is not to presume to "minister of his own head, or ordaine any purgation or other composition of Physick for any man: or that he should prepare and make any purgation or notable confection, without the Physitians advise and counsell, unless that the Physitian had first seen and viewed the ingredients, whereof the compositions are made, and especially the purgations." This viewing of the Apothecary at his work reminds one of a rude illustration in Braunschweig's "Chirurgia" (1534), in which the doctor is represented pointing from a book to the medicine-jars upon the walls of the shop while the druggist, an illiterate in an apron, toils at a huge mortar and is evidently glad of the advise and counsell of his superior. Quacks, herbalists, and such like are to be summarily dealt with. "It is not decent nor profitable for the Common-wealth, that any ignorant lewd or ill suspected person, to be man or woman, should be suffered to make, sell, or

minister Medicines to anybody, but that such kinde of persons (being duly examined and convicted by the learned Physitians of the Dioces) should have condigne punishment appointed them." The herbalists of Elizabeth's time seem to have sheltered themselves under that Act of Henry VIII., which still protects their modern representatives. "Many there are," we are told, "That bear themselves very stout, upon an Act that was made by King Henry the 8 in his daies, affirming that Act to make full and wholly in all points for their purpose." But "whereas the Act presupposeth in them a knowledge of the simples, as of herbes, rootes, and waters, and of the virtue and operation of them, alas, they can scant tell what a simple meaneth." They confuse the names of herbs, with the worst results, taking *rubus* to be *rubia*, borage to be buglosse, and so forth. "They practise at a venture a thing which they know not, whether it be cold, or hot, dry, or moist." They are vile at diagnosis, know not the difference between a colic and a stone, "what stranguria is," or when an Ague is tertian, when quotidian.

Article 5 of the Code brings us back to the Physician, who is warned not to "take upon him the name of any degree of Schoole, as Bachelour, Master of Art, or Doctor: or (to) cause and permit any writer or printer so to terme him, unlesse he can approve it to be so indeed by any University." It is noticeable that puffery is not here forbidden. Indeed the whole of this code is tentative so to speak: it aims at defining the relationships of the various constituent elements of the medical world, but offers no minute rules of etiquette. Nothing is said here for instance about the "medical secret," or such topics as kindness or reticence in the treatment of patients. The profession

at that time had probably not evolved many ideas of conduct now familiar. Yet Hippocrates' "De Medico" is quoted to show that an ideal physician should be at once comely, studious, and of high character. Indeed it would be a mistake to suppose that the Elizabethan doctors were without a high conception of their calling.

The sixth Article is little more than a devout aspiration, to wit "That no Midwife should disdain to come to ask counsell of the Phisitian, as often as any woman being in labour of childe, is in danger." Midwives should have a status. "It were good also that the Midwives were first sworne, before they take upon them thei office." "It were also good and expedient," runs the seventh and last of these Articles "concerning the ministration and use of Physick," "That (as the use of London is, granted by an Act of Parliament) that the Physitians in every other Dioces, one, or two or more, should have licence, to search and view the Apothecaries shop once a year at the least, and see whether their stuffe and medicines be good and lawful or not."

"These Articles above rehearsed," concludes this unknown Elizabethan doctor, "I thought good here to alledge (although under correction of my superiors) because that some occasion may be given to reform the enormites and abuses in the science of Physick. And here let no man think, that I mean to speak anything in any point against the privileges and liberties granted by an Act of Parliament to the Company or Corporation of the Phisitians of London, for I mind not, nor may not meddle with their privileges."

MEDICINE AND THE JAPANESE RENAISSANCE.—Though much has been written on an event which is perhaps the most remarkable

in the history of the world—the complete assimilation of modern civilisation by Japan in the course of a single generation—the important part played by medical science in initiating the movement seems to have passed unnoticed. In an address recently delivered in Edinburgh, and published in the *Scottish Medical and Surgical Journal* of Feb., Dr. Jokichi Takamine, who discovered the amylolytic ferment, taka-diastase, and first isolated adrenalin, the active principle of the suprarenal gland, and is thus himself one of the first fruits of the Japanese renaissance, bore witness to this fact.

The Dutch practitioners who settled in Japan in 1850-60 demonstrated the superiority of modern over Chinese medicine. Japanese physicians soon saw the advantage of studying the more advanced art, and discarding their old system. A handful of disciples of Dutch physicians scattered in different parts of the country were soon overwhelmed with patients and pupils. Before many years private medical institutions, called Jiku, were scattered all over the country. At this time the central government of Japan was still hesitating to open commercial relations with foreign powers. To do business with foreign nations was a criminal offence. Anyone who tried to go abroad risked his head. Yet, in the midst of such anti-foreign feeling, medical science and practice made steady progress all over the country. The Shogun Government was forced to make a commercial treaty with foreign powers. Soon after, when the present emperor resumed power, the demand for persons who had knowledge of foreign languages, arts, etc., was suddenly increased, and was supplied by medical practitioners and their pupils. Bright, capable young men were selected irrespective of their hereditary

rank. Statistics show that in a dozen or more cabinets, from 40 to 60 per cent. of the members were either medical men or their pupils. The Marquis Ito, the "Maker of New Japan," was a medical student; Count Okuma was another. Thus the progress of modern Japan can be attributed to medical science. Dr. Takamine's grandfather, a practitioner of the Chinese school, saw the superiority of modern medicine and sent his son when of age to study under the Dutch. The latter, finding the language difficult, appreciated the necessity of beginning the study of foreign tongues earlier. He therefore sent his son, Dr. Takamine, while young, to Nagasaki, where the foreign settlement was, with a view to his studying medicine later. After graduating in the University of Japan, Dr. Takamine was sent to Britain to complete his studies. Twenty years ago, at Anderson's College, Glasgow, he commenced the study of the mycelial ferments which culminated in his discovery of taka-diastase.

INVALID GIFTS OF PATIENTS.—The case of *Radcliffe v. Price* recently decided in the Chancery Division should be a warning to medical men to take precautions before accepting gifts from patients. The plaintiffs, executors of Mrs. Emily Dowling, who died on March 23rd, 1900, sought to recover from Dr. Alfred F. Price, who had for 11 years attended her, sums of £500, £100, and £200 given by her to him during 1898 and 1900. Mrs. Dowling died at the age of 80, leaving property stated to have

amounted to £90,000, which she inherited from her first husband. By her will she appears to have provided for her second husband, made bequests to her relatives, who were in humble circumstances, and given property for a museum and public garden, besides making large gifts to charities. The executors made no charge of fraud or improper conduct against Dr. Price, nor did they deny that his patient was capable of managing her business, but simply claimed that as he was her medical attendant and she had acted without independent advice there was presumption of influence. Dr. Price gave a full explanation of the circumstances under which the gifts were made. The £500 was a gift, partly in recognition of his exceptional service as medical attendant and partly in recognition of his consent to accept the office of trustee of an institution to be founded as a memorial of the donor's first husband. The judge, in giving judgment for the executors, said that the relation of patient and physician was confidential, and that, therefore, the donor should have had competent and independent advice before a gift could be supported. This result is an example of a hard case making good law. That a wealthy lady should make gifts to her medical attendant who undertook for her non-professional obligations is quite proper. But the gifts are invalidated and Dr. Price is mulcted in costs simply because he neglected the precaution of seeing that some independent person, who was fit and able to advise the patient, was aware of the transaction.

LEADING ARTICLES.

LANCET, March 8, p. 665.

Elephantiasis of the External Genital Organs from removal of the Inguinal Glands.

By DR. J. P. ZUM BUSCH.

Elephantiasis of the external genital organs which is not caused by the *filaria sanguinis hominis* is rare. It may follow any extensive obstruction of the inguinal lymphatics; it does not commonly follow removal of the inguinal glands probably because all are rarely removed. The treatment is difficult. Some improvement follows removal of much of the hypertrophied tissue but in many cases as the lymphatic obstruction continues there is a great tendency to a relapse. In this connexion a case shown by Mr. R. J. Godlee at the last meeting of the Clinical Soc. is of interest. A man had obstruction of the thoracic duct with consequent dilatation of the inguinal lymphatics. Mr. Godlee, acting on a suggestion of Dr. P. Manson, effected an anastomosis between one of the dilated lymphatics and the saphenous vein, with the result that the dilated lymph-vessels subsided. A similar operation in some forms of elephantiasis of the scrotum and penis might be equally successful.

CASE 1.—A man, aged 21, was admitted to hospital in April, 1893, with soft sores and lymphadenitis in both groins. Whilst the left bubo became smaller and painless the right suppurated and was incised. He was discharged at the end of May, but was re-admitted soon afterwards owing to the formation of a fistula on the right side; the glands of the left side had also become re-enlarged and painful. As several incisions and scrapings did not

effect a cure, in the middle of Aug. the whole of the remaining glands (which were swollen and dotted with numerous small abscesses) and the surrounding tissues were removed by two lengthy and difficult operations. The large vessels were not injured. Both wounds healed by granulation and the patient left the hospital in Oct. apparently well. In Jan., 1894, he occasionally noticed œdematous swelling of the prepuce which disappeared on applications of lead lotion. Gradually, however, the œdema recurred more frequently, extended over the penis and scrotum, and became persistent. In April, 1894, the scrotum was as big as two fists, the skin being hard and greatly thickened; the penis was twice its normal size, the prepuce being especially enlarged, and the whole region was in a condition of chronic elephantiasis. In spite of different methods of treatment this condition was unchanged in June, 1901. Operation was declined.

CASE 2.—A man, aged 20, was admitted to hospital in March, 1896, with bilateral buboes of long standing. The integument was inflamed and perforated by many fistulæ and the superficial and deep inguinal and crural glands were enlarged and fixed. Whilst the left bubo was successfully treated by numerous incisions and scrapings the right did not improve and was finally removed by an extensive operation as in Case 1. The patient remained well for about 4 months after discharge, then the penis and scrotum began to swell and gradually assumed a state of chronic elephantiasis, the enlargement being much greater on the right side than on the left. When last seen, in Nov., 1898, the condition was rather worse.

CASE 3.—A sailor, aged 24, was admitted to hospital in Nov., 1901. From Aug. to Nov., 1899, he was in hospital with bilateral buboes. Extensive operations were performed, but no large vessels were injured. Soon after discharge from hospital he noticed gradually increasing œdema, first of the prepuce, later of the whole penis and the scrotum.

The scrotum was nearly as large as a coconut, the penis was 3 or 4 times its normal size, and the prepuce hung down like a balloon. The lymph-stream was not entirely obstructed, for by elevation in bed the parts were temporarily diminished; the swelling which remained was like elephantiasis and was exceedingly hard. The prepuce was removed with a large piece of integument from the whole length of the penis. The wound healed well and the patient was satisfied with the result. It is proposed to operate in a similar way on the scrotum.

CASE 4.—A married woman, aged 32, gave the following history. Three years previously she was infected by her husband and suffered from a sore at the vaginal orifice, which was followed by suppuration of the inguinal glands. Judging from the resulting scars very extensive operations had been done. About 3 or 4 months later she developed erysipelas of the vulva, which left permanent enlargement of the labia majora. Erysipelas recurred 4 times. Each attack left the external genitals more swollen and indurated. The labia and clitoris were much enlarged and very hard; they, as well as the mons Veneris, were in a typical condition of elephantiasis.

This untoward result of removal of the inguinal glands has not been sufficiently recognised. Riedel has published 2 cases and advises surgeons to avoid too extensive operations in inflammatory conditions of the inguinal glands.

The writer has seen one case in which elephantiasis occurred in the upper extremity. A man, aged 24, was admitted to hospital in Nov., 1900, with chronic brawny œdema of the left upper limb. The arm was enormously swollen and the skin was hard and in many places scaly; the condition was said to have followed an operation for suppurating axillary glands performed two years previously. There was a long scar in the axilla and a smaller one above the clavicle. Such an occurrence seems to be very rare, as the writer has never seen it after Halsted's operation except when the vein had to be tied or when the growth implicated the vessels. It is important to remember such cases and to be as conservative as possible in the treatment of extensive inflammatory disease of glands. The recommendation of some surgeons to remove the whole affected area should never be followed except as a last resource in otherwise incurable cases of bubo, in which a radical operation is all the more justifiable as the suppuration itself will probably destroy all the glands and block the lymph-channels. In cases of cancer and tuberculosis the glands with the surrounding tissues must of course be removed as thoroughly as possible; the inconvenience of chronic œdema is a small evil compared with the danger of recurrence.

BERLIN KLIN. WOCH., Jan. 13, p. 21.
Segmental Localisation of Spinal Tumours.

By Prof. H. OPPENHEIM.

The localisation of the level of a tumour in the spinal canal has become possible only since the exact peripheral distribution of the spinal nerves has been ascertained. The following case is typical :—

A man, aged between 40 and 50, had had pain in the left hypochondrium for $2\frac{1}{2}$ years, which was attributed to rheumatism or intercostal neuralgia. On Sept. 1, 1901, it was so severe that the trunk was held rigidly and slightly towards the left. There was no spinal deformity. The umbilicus deviated slightly to the left, and the abdominal muscles were somewhat flattened on that side. The left abdominal muscles did not respond to faradisation, and the abdominal reflex was absent on that side. The reflexes in the lower limbs were normal. The persistent character of the intercostal neuralgia, the unilateral absence of abdominal reflex, and the atrophic paresis of the abdominal muscles pointed to a tumour within the vertebral canal. Three weeks later, on Sept. 22, the abdominal paresis had increased, and the left hypochondrium and abdominal region were hypæsthetic over an area corresponding to the distribution of the eighth and ninth dorsal nerve roots. There was some thermo-anæsthesia of the right leg, which showed definitely, before any motor or reflex symptoms appeared in the lower limbs, that there was pressure on the spinal cord. Before operating, extension in the dorsal position was tried. The symptoms of compression, however, increased rapidly, and on Nov. 12 there was paraplegia, the left leg being almost completely paralysed, while the right foot and toes could be moved slightly. Analgesia, on the other hand, was complete in the right leg, and less pronounced in the left. There was hypæsthesia of both legs. The deep reflexes were increased, especially on the left side, and Babinski's sign and ankle-clonus were present. Girdle pains appeared, and the abdominal reflex was absent on both sides. There were bladder symptoms which necessitated catheterism. This slow but steady development of

symptoms of unilateral compression of the spinal nerve-roots, which later gave place to symptoms of compression of the cord at the same level, proved conclusively that the tumour had primarily involved the nerve roots and had not originated within the cord itself. The seat of pain, the disturbed abdominal reflexes, and the atrophy of the left abdominal muscles pointed to the eighth and ninth, and possibly some of the succeeding dorsal nerve-roots. As the anæsthesia was not complete over the area supplied by the eighth dorsal nerve, and ceased immediately above it, involvement of any higher segment was excluded. The eighth dorsal nerve is on a level with the sixth thoracic vertebra. On Nov. 15 the spinous processes and laminæ of the fifth to the seventh thoracic vertebræ were therefore removed. The dura mater bulged into the opening exactly opposite the sixth dorsal vertebra, and on incision a tumour, of the size of a hazel nut, obstructed the opening. It was easily shelled out. The spinal cord though pushed over to the side was not involved (Fig. 1). The tumour was a myxo-fibroma (Fig. 2).

There was temporary improvement. On Nov. 21 micturition was performed normally, and though anæsthesia and analgesia persisted over the left hypochondrium, and extended downwards almost to the umbilicus, needle pricks were painful over the corresponding area on the right side. Sensation was almost normal below the umbilicus, and present, though blunted, in both legs. The knee jerks were exaggerated on the left side and ankle-clonus and Babinski's toe reflex persisted. The thighs could be rotated inwards, and all the toes of the right foot, and the great toe of the left could be moved. Pain and girdle sensations had disappeared. On Nov. 22 the right thigh could be flexed. But on Nov. 23 tachycardia, headache, dulness, and



FIG. 1.—Diagram showing the Relation of the Tumour to the Spinal Cord.



FIG. 2.—The Tumour (natural size).

restlessness alternating with drowsiness appeared. On Dec. 1 there was incipient optic neuritis and next day there were nystagmus, retraction of the head, complete paraplegia, and vesical paralysis. The subsequent course was that of acute ascending purulent cerebro-spinal meningitis. Death occurred on Dec. 4.

NECROPSY.—There was purulent cerebro-spinal meningitis, limited in the brain to the base. The surface of the spinal cord was but slightly depressed at the level of the eighth dorsal nerve and on section appeared normal. Microscopically, however, there were diffuse changes, which were most marked in the posterior columns and were traceable as an ascend-

ing degeneration into the cervical enlargement. They had probably appeared with the symptoms of compression 4 to 6 weeks before death, and but for the infection of the meninges, were not sufficiently advanced to have prevented almost complete recovery.

LANCET, Feb. 22, p. 515.

An Unexplained Condition of Chronic Cyanosis with Increase of Erythrocytes.

By DR. R. SAUNDBY and DR. J. W. RUSSELL.

A man, aged 48, was admitted to hospital on April 24, 1891. He complained of pains all over the body, which were most marked in the abdomen, and of general illness of 5 days' duration. For the previous 3 or 4 months he had, however, felt ill and suffered a good deal from headache. He contracted syphilis at 19. The spleen was persistently enlarged during his stay in hospital. The urine had a specific gravity of 1010 and contained a trace of albumin, but no casts. Beyond unusual pigmentation of the mammillæ and the presence of a few pigment marks about the trunk no abnormal colouration was observed. He was discharged on May 16, with the spleen as large as on admission.

On Jan. 29, 1898, he was again seen. He complained of pains all over the body, which were most marked in the right side and head. They were of 6 weeks' duration. He was extremely cyanosed. He had entirely recovered from the illness of 1891. The present illness had existed about 8 months, during which he had suffered from gnawing pains in the abdomen, generally worse in the earlier part of the day. These were mostly independent of food, and were relieved by lying down. He was habitually constipated. For the pre-

vious 6 weeks he had lost flesh and strength. He found difficulty in standing for any time and in raising himself from the stooping posture. A few nights previously he got out of bed and fell down, and was so weak that he had to lie on the floor for the rest of the night. Since then he had kept in bed. He could not give the date of onset of the cyanosis.

He was fairly well-nourished. The mental condition was dull and apathetic, and the speech slow, thick, and mumbling. Memory and attention were impaired. The temperature was slightly subnormal. The face was extremely cyanosed, especially the nose, which was large and broad and showed many dilated venules. The conjunctivæ were injected and yellowish; the pupils were contracted. There was marked clubbing of the fingers. The skin over the trunk was slightly pigmented, especially on the left side from the axilla to the hip. There were small scars over both the front and the back of the chest and the front of the legs. The skin of the arms and hands was thin, soft, and cold and bright red round the joints. The lower part of the legs showed considerable bronzing. The teeth were extremely bad, the majority being either missing or represented by decaying stumps. The tongue was thickly furred. The superficial veins of the abdomen were enlarged. The spleen extended down to the level of the umbilicus and to the middle line in front. It was hard and but slightly tender. There was increased resistance in the right hypochondrium and tenderness in the region of the gall-bladder. The liver dulness extended half-an-inch below the ribs, but the edge could not be felt. The heart sounds were normal except for some accentuation of the pulmonary second sound; the pulse was 96, soft, and easily compressible. The inguinal

glands were enlarged. The urine was of s. g. 1012 and contained albumin, epithelial cells, and leucocytes, but no casts. The total quantity passed in the 24 hours averaged from 40 to 50 ounces, and the urea 400 grains.

On Feb. 1 the red cells numbered 9,000,000 and the hæmoglobin measured over 120 per cent. The spectrum of the blood was normal. On Jan 31, and Feb. 3 and 7, there was a considerable quantity of uric acid in the urine, and on the 6th the urea amounted to 738 gr. Only once—namely, on the 7th—were a few hyaline casts found in the urine.

On March 24 the cyanosis was more marked and there was distinct jaundice. The patient was extremely drowsy and apathetic, and lay all day with his eyes closed and paid but little attention even when roused. He constantly and unconsciously passed urine in bed. The temperature was 99° and the pulse 90. The liver dulness extended to half-an-inch below the costal margin. The blood count on March 25 and on April 2 showed 7,360,000 red cells. The cyanosis increased, but the jaundice diminished. The temperature fell below the normal until the day of death, on April 8, when it rose to 100·8°.

NECROPSY.—The heart was somewhat enlarged, weighing 13 oz. The left ventricle was thickened and there was some old mitral valvular disease. No communication existed between the two sides of the heart. The lungs were engorged and the bronchial tubes contained much muco-pus. There were adhesions between the pleuræ and the diaphragm. The liver was large, very firm, and weighed 66 oz. The kidneys were large and congested; the right kidney weighed 6½ and the left 7 oz. The capsules were not adherent. The suprarenal capsules were small, dark-red, and very soft. The spleen weighed 48 oz.,

but was of normal consistence on section. The brain was congested and the arachnoid was opaque in patches. The marrow of the femur was normal on naked-eye inspection.

Three apparently similar cases have been published in the *Boston Med. and Surg. Jour.* The two following cases are recorded by Dr. Cabot (*ibid* Dec. 7, 1899, and Mar. 15, 1900).

CASE 1.—A masseuse, aged 46, was seen in Oct., 1895. For two years she had suffered whilst at work from attacks of sudden mental and muscular prostration. She had lately noticed increasing blueness of the lips, and stated that during the attacks her face became dark purple and the eyes bloodshot. The more severe attacks lasted 24 hours and were accompanied by violent headache and nausea. Two weeks previously she had an attack of sciatica, during which ecchymoses appeared on the outer side of the thigh.

The lips and nose were remarkably cyanotic and the whole face was dusky and apparently somewhat puffy. There was slight swelling of the ankles. The heart was practically normal. The temperature was 98.6° and the pulse 90. The urine had a s.g. from 1011 to 1016 and contained a slight trace of albumin and a few hyaline casts. It amounted to from 60 to 70 oz. and contained 8 or 9 gr. of urea to the ounce. The red corpuscles numbered 10,460,000 and the white 20,000. The hæmoglobin measured about 150 per cent. The condition remained much the same for the next two years, but in Jan., 1897, there was free hæmorrhage after the extraction of a tooth. Shortly after, whilst walking in the street, peculiar movements of the legs suddenly occurred and she had to hold some palings to avoid falling. In Feb., 1897, during an attack of headache, weakness of the left arm and leg developed. She gradually be-

came comatose and died on March 3rd. A small hæmorrhage from the middle meningeal artery and passive congestion of all the organs were found.

CASE 2.—This case was shown at the Massachusetts General Hospital on Dec. 15, 1899. The patient was a woman aged 49. She was first seen on Jan. 5, 1894, and complained of vertigo, weakness, and constipation. She was then thought to be suffering from lead-poisoning. She did not attend again until Jan. 12, 1895, when she complained of similar symptoms with palpitation and præcordial distress during excitement or exertion. She had suffered much from headache. All her symptoms had been present for several years, but had markedly increased during the previous 4 months. The face and mouth were cyanosed and the conjunctivæ were injected. The heart was normal except for a slight pulmonary systolic murmur. The edge of the liver was palpable, and the spleen could be felt two finger-breadths below the ribs. The gums bled easily. The hands and feet were blue but the fingers were not clubbed. The urine was of low s.g. and contained a trace of albumin, a few hyaline casts, and a trace of bile. The hæmoglobin amounted to 120 per cent. She was discharged on March 28, 1895. On April 4, 1899, she was in much the same condition. The red corpuscles numbered over 12,000,000. The skin showed considerable bronzing, especially about the axillæ, and some small leucodermatous patches about the trunk. The spleen extended a hand-breadth below the ribs and the liver 3 finger-breadths below the costal margin. The urine contained 0.1 per cent. of albumin. Later the red cells numbered 9,252,000 and the white cells 10,600, and the hæmoglobin measured 110 per cent. The patient was readmitted twice subsequently in the year in the same condition.

CASE 3.—This case was recorded by Dr. S. F. McKeen (*Boston Med. and Surg. Jour.*, June 20, 1901).—A man, aged 53, was seen on May 6, 1901. He had been liable during the last 20 years to sudden attacks of dyspnoea at intervals of from 6 months to 2 years. He noticed blueness of the face and hands $1\frac{1}{2}$ years previously, and stated that it had come on suddenly whilst recovering from an attack of dyspnoea. The blueness often increased suddenly without accompanying symptoms, and was not brought on by exertion, though it was generally more marked during an attack of dyspnoea. He had had no headache. For two years he had been subject to diarrhoea.

There was extreme cyanosis of the face, especially of the lips and tip of the nose and ears. The small veins and capillaries of the skin were dilated. The hands and feet were very blue, and there was slight clubbing of the fingers. The conjunctivæ were injected and the gums were swollen and easily bled. The heart was normal. The edge of the liver was not felt, but the dulness extended to 2 finger-breadths below the ribs; the spleen was felt one inch below the costal margin. The temperature was normal. The urine amounted to 70 oz.; it had a s.g. of 1015 and contained a trace of albumin and 35 gm. of urea. There were a few granular casts. The red corpuscles numbered 9,440,000, the white 9000. The hæmoglobin measured 120 per cent. The polynuclear corpuscles amounted to 74 per cent., the small mononuclears to 18 per cent., the large mononuclears to 6 per cent., and the eosinophiles to 2 per cent.

These cases possess many points in common besides the extreme cyanosis. In 3 out of the 4 great weakness and prostration were prominent symptoms; the fourth patient suffered from attacks of dyspnoea, whilst one of the

others had attacks of palpitation and præcordial distress. Three suffered from severe headaches and all were constipated. In all the conjunctivæ were injected and in 2 bleeding occurred from the gums. The liver was slightly enlarged in 3 cases, but jaundice only existed in one, though in another there was once a trace of bile in the urine. The spleen was markedly enlarged in 3 cases and in all 4 there was a trace of albumin in the urine with a few hyaline casts. Patches of pigment were observed in 2 cases. The condition of the blood was practically identical in all 4 cases; there was a great increase in the number of red corpuscles, which often were more than double the normal. The hæmoglobin was always markedly increased, but by no means proportionately to the number of the red cells. The white corpuscles were either normal or but slightly increased. All the patients were over 45.

The pathology is unknown. M. Weil has recently recorded two cases of congenital cyanosis in children, apparently without heart lesion, but with "*hyperglobulie*." In one case there were enlargement of the spleen and marked changes in the bone-marrow and thymus (*Semaine Méd.*, July 3, 1901).

GAZ. HEBD. DE MÉD. ET DE CHIRURG.
Jan. 2, p. 1.

Clubbed Fingers in Hypertrophic Cirrhosis of the Liver.

By A. GILBERT and P. LEREBoullet.

It has long been known that chronic diseases of the respiratory system and cyanosis are sometimes accompanied by clubbing of the fingers. This deformity is a miniature form of the more or less severe articular troubles described by P. Marie as hypertrophic

osteo-arthropathy. In 1895 Gilbert and Fournier drew attention to clubbing of the fingers in the course of infantile biliary cirrhosis, which was or was not accompanied by osteo-articular deformities. In the 3 cases then published there was no respiratory or circulatory affection to account for the state of the fingers. Since then several cases have been reported. The writers know of 40 cases, but this gives no clue to the frequency of the condition, because often in biliary cirrhosis, the state of the fingers is not observed. In most of the cases there was no respiratory affection; when there was it was not sufficient to explain the deformity of the fingers. The condition of the fingers varies with the duration of the cirrhosis and its extent. In some cases only a slight clubbing is present—the ends of the fingers being broadened and squared, but only a little swollen, while the nails, which are sometimes striated longitudinally, do not show marked deformity. The deformity is often more apparent, the nails becoming highly convex and assuming the shape of a watch-glass. The ends of the fingers are broadened and thickened till the classical resemblance to the pendulum of a clock is presented. Characteristic examples are seen in Fig. 1. A similar deformity may be seen in the great toe. The nails may bend round the end of the finger like a parrot's beak. The writers have seen one case in which they were like bird's claws. Though the terminal phalanx of the finger may be the only one affected, sometimes (if there is a rheumatic taint) the hypertrophy affects the joints of the fingers, the wrists, the knees, etc., (the osteo-arthropathies of Marie).

CASE 1.—A woman had biliary cirrhosis, and only slight clubbing of the fingers. Three months later the deformity was markedly typical. Though in the interval she had had



FIG. 1.

respiratory troubles, they were so slight and of such recent date as not to be responsible for the state of the fingers.

CASE 2.—A woman came under care with jaundice of 2 months' duration. There was no clubbing of the fingers but it appeared after three months. The patient herself remarked the thickening of her fingers, and the increasing convexity of her nails. Radiography showed (Figs. 2 and 3) that the deformity consisted of hypertrophy of the soft parts.

In all cases the bony lesions are slight. In a case in which the writers conducted a necropsy, the dissection of a markedly clubbed finger showed that the hypertrophy was entirely one of the soft parts. Further observation may show that in cases in which the deformity is very marked, the bone participates; but the soft parts appear to be always the most affected.

Clubbed fingers are found in hypertrophic (biliary) cirrhosis of the liver, and not in other forms of cirrhosis, except when there is a respiratory or circulatory cause to explain the condition. Bouchard published a case of hypertrophic alcoholic cirrhosis, in which there were marked clubbing of the fingers, grave circula-



FIG. 2.

tory lesions ; but the deformity of the fingers did not appear till after the hepatic condition. Clubbed fingers may be found in cases of biliary cirrhosis produced secondarily Chatin and Cade report such a case. A man, aged 50, had jaundice for several months, and a necropsy revealed biliary cirrhosis which was produced by obstruction from suppurative cholecystitis. He had slight but perceptible clubbing of the fingers. Radiographs shewed osseous changes in the index, middle, and ring fingers ; the phalanges of which were swollen at their free ends, and studded with osteophytes. The writers ascribe the digital condition to two causes—toxic infection and cholæmia.

LANCET, Feb. 15, p. 451.

Chloroma.

By Dr. G. H. MELVILLE DUNLOP.

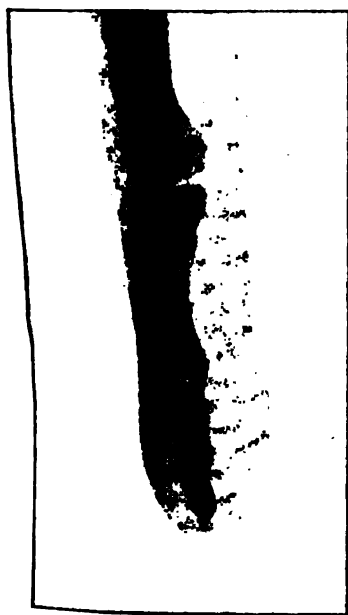


FIG. 3.

A boy, aged 5, was admitted to hospital on Sept. 30, 1901, complaining of great weakness and "swelling of the face." He had whooping-cough at 6 months, measles at 3 years, and frequent attacks of bronchitis, but was, on the whole, a healthy child. For fully a year ecchymoses were frequently noticed, and were attributed to bruises. In May, 1901, extreme pallor of the face was first noticed. For some months previously it had been observed that any scratch appeared to suppurate immediately. He commenced to call out in his sleep and to snore at night. His appetite became poor and the pallor and emaciation steadily increased. At the beginning of Aug. he became dull and languid and ceased to play or to go out-of-doors. On Aug. 16 his mother noticed that his eyes were prominent, and that the veins on the eyelids were dilated. This exophthalmos

gradually increased. Deafness was noticed about the middle of Sept., and had increased gradually.

He looked extremely ill, and his weight was 39 lb. His complexion was very pale, and of a waxy, yellow tint. Numerous petechiæ, like flea-bites, were scattered over the whole body, with the exception of the face. There were 2 larger hæmorrhages over the spinal column and over the right knee, and evidence of an old hæmorrhage on the right shin. The face was pale and pasty, with marked puffiness of the eyelids, especially of the left. Some œdema and marked anæmia of the conjunctivæ were noted, as well as considerable protrusion of both eyeballs. There were a few slightly enlarged glands under the lower jaw on both sides, in the posterior triangles of the neck, and in the groins. The axillary glands were not enlarged. A loud hæmic bruit was heard in the neck. The hæmoglobin was 32 per cent.; the red blood corpuscles were 1,800,000; and the leucocytes, 245,000. Films showed a large number of lymphocytes, both large and small, the former preponderating and numbering about 73 per cent.; polymorphonuclear, 17 per cent.; myelocytes, 5 per cent.; unclassified and transitional forms resembling myelocytes, 5 per cent. A few nucleated red cells were present. On Oct. 15 two fresh hæmorrhages had appeared, and the eyeballs were becoming more prominent and the deafness was increasing. A hard, indurated purplish swelling was found on the hard palate on both sides in its whole extent antero-posteriorly, and a similar but smaller swelling on the right side of the lower jaw external to the teeth. By the 22nd a firm rounded swelling had appeared in each temporal region and extended into the orbit on either side. It was attached

to the bone below but not to the skin. Chloroma was diagnosed. A few days later the upper eyelids and lower right eyelid became infiltrated with firm smooth swellings. During sleep the eyeballs were only half covered by the lids. The ophthalmoscope revealed a minute hæmorrhage near the right disc. The retinal veins were tortuous and distended in both eyes. The appearance was like that of optic neuritis. On Nov. 6th a pale, greenish-yellow tumour of a jelly-like consistence appeared at the inner canthus of the right eye and gradually advanced over the eyeball, covering its lower half. The left eye was similarly affected, but to a less extent. There were severe frontal pain and marked photophobia. The temporal tumours appeared to have diminished, but marked optic neuritis had developed and the retinal hæmorrhages had increased in number. By the 12th the growths had covered both eye-balls, and the corneæ were apparently destroyed. The leucocytes were 107,000, the red blood corpuscles 815,000, and the hæmoglobin was 12 per cent. Death occurred on the 16th.

NECROPSY.—The spongy bone of the manubrium sterni was of a dull greenish-grey colour. The lungs were pale, but they were interspersed with irregular patches of congestion and extravasations. On the surface of the heart were two small greenish areas. The ribs were green in their whole extent. The periosteum of the vertebræ from the neck to the pelvis was infiltrated and thickened with greenish tissue, continuous with that passing along the intercostal vessels and nerves. During the progress of the necropsy the green colour gradually faded. Many minute hæmorrhages were present in the gastro-intestinal mucous membrane. The kidneys were very pale, and of a pinkish-green colour, and dotted with

green spots under the capsule. On section numerous bright green areas, varying in size from a pin-head to a quarter of an inch in diameter were found, chiefly in the cortical areas near the medulla. The mesenteric glands were enlarged; one or two greenish glands were found near the head of the pancreas, others in the same neighbourhood contained brownish pigment. The pancreas was of a pale, yellowish-pink colour, and contained small greenish nodules. On reflecting the scalp green tissue was found along all the sutures, but it was confined to the pericranium, and could be stripped completely off the bones. Underneath and infiltrating the substance of the temporal muscles, were bright grass-green growths from $\frac{1}{4}$ to $\frac{3}{8}$ in. thick. These had evidently developed from the periosteum, and had extended deeply into the sphenomaxillary fissure. The diploë throughout was of a dirty greenish colour and over the dura mater were numerous green patches. All the bones in the anterior part of the skull were infiltrated with dull green material. In the orbits numerous sharply defined masses were present, surrounding the optic nerve and eyeballs and extending under the conjunctivæ. The soft palate, pharynx, tonsils, mouth, and gums were infiltrated with deposit. Numerous bones examined showed this green material in the medulla.

Only 27 cases of chloroma have been recorded. The tumours have been variously described as green cancer, fibroplastic tumours, amorphous fibrous tumours, and pigmented myxo-sarcoma or chloro-myxo-sarcoma. Huber defined the condition as metastatic periosteal sarcoma, and maintained that the tumours always originated in the bones of the head and face, and that the growths in other organs were secondary and of metastatic

origin. Recklinghausen, in 1883, stated that the tumours in chloroma differed in many respects from periosteal sarcomata, and he insisted on the intimate relation between this affection and leukæmia. He showed that the structure of all the tumours in his case was purely lymphomatous, and he was supported by Höring, Dock, and Chiari, and others, with the result that the growths were generally regarded as lympho-sarcomata. "Lympho-sarcoma" is probably the best definition of the growths—which resemble lymphoma in their histological structure and sarcoma in their periosteal origin and metastasis. Recently Cordua and Ricker have advanced the view that a close relation exists between lympho-sarcoma and tuberculosis. The colour of the tumours, which varies from a yellowish-green to a bright grass-green, was considered by Huber, Virchow, and others to be due to adipose granulations which are found in and between the cells. The colour quickly disappears from periphery to centre on exposure to air or on immersion of the tumour in water, alcohol, chloroform, or ether. Dock thinks that it is simply an exaggeration of the greenish tint so common in the neoplasms of leukæmia, which he maintains is another proof that these conditions are closely allied. It is generally admitted that the tumours originate from the periosteum of the head and face, and grow secondarily in other organs. Nearly every organ except the brain has been invaded by secondary growths. The brain may be compressed, but it is never invaded. Of the internal organs the kidneys are most affected, but in only one other case besides the present one was the heart invaded. The bones are frequently so distended by the growths as to become translucent. Erosion or pitting of the bone was a marked feature in many cases. Microscopically the tumours

consist of large round or oval-shaped cells, slightly larger than a white blood corpuscle, containing many nuclei and occasionally nucleoli. These cells are either embedded in an inter-cellular transparent amorphous material or in a delicate network. At other times the tumour is interspersed by coarse bundles of connective tissue. In the midst of this network the granules, with the highly refractile properties referred to, are found lying in and between the cells.

Chloroma is chiefly a disease of children and adolescents. Boys seem to be attacked more often than girls. The relationship to leukæmia was first noticed by Recklinghausen. Dock pointed out a further resemblance in the similarity of the symptoms. Thus deafness is common to both; in chloroma it is due to the pressure of tumours in the internal, middle, and external ears. In leukæmia, though sometimes ascribed to hæmorrhage, in many cases it is caused by the pressure of leukæmic tissue in the ear. Exophthalmos is common to both diseases, while marked progressive anæmia—accompanied by petechial extravasations, epistaxis, and subconjunctival and retinal hæmorrhages—is found in both. Dr. Dunlop's case seems to be the first diagnosed during life. Before the appearance of the tumours a diagnosis would be impossible, as the symptoms would only point to leukæmia. When subsequently to those symptoms exophthalmos, failing sight, deafness, and tumours in the temporal regions and in other parts of the body supervene the diagnosis of chloroma should always suggest itself. The disease is invariably fatal from exhaustion, the average duration being 5 or 6 months, although cases of more than 2 years have been recorded.

LANCET, Feb. 22, p. 521.

Chloroma and Leukæmia.

By BYROM BRAMWELL, M.D., F.R.C.P. Ed.

CASE 1.—A man, aged 25, had excellent health until Oct., 1900, when he accidentally discovered a small glandular swelling on the left side of the neck below the jaw; a week later a similar swelling developed on the right side of the neck. In Jan., 1901, an eruption appeared on the front of the chest and gradually extended over the greater part of the body. In Feb. rheumatic pains were felt for a fortnight in the back. In April the face and gums swelled, the eyes became watery and painful, the voice husky, and some deafness developed.

On May 22, when he came under observation, he was much debilitated and had lost 14 lb. He complained of soreness of the mouth and gums and of deafness. He was not anæmic. There was no excess of white corpuscles in the blood. The face was swollen chiefly from nodules and œdema of the skin and glandular swellings in the neck and parotid regions. The voice was husky and the breathing was stridulous. There was frequent cough, and he could not breathe through the nose. The pulse was 120 to 130, and the temperature was 100·6°. A general eruption of flat-topped nodules varying in size from that of a pin-head to that of a sixpenny-piece was present; it was copious on the thorax, abdomen, back, arms, face, and scalp, but sparse on the lower limbs. In many places the nodules were confluent; they were painless, not adherent to the deeper parts, and for the most part slatey-grey or purple-grey, some being yellow in their centres. The gums were enormously swollen, firm, and dark purple. The right tonsil was much swollen and was also firm and a dark

purple. The conjunctivæ presented a peculiar appearance, being infiltrated with a translucent, fleshy-looking growth in which vessels could be seen ramifying. The glands on each side of the neck below the jaw were swollen, hard and painless. The parotid glands appeared to be enlarged. There was some symmetrical swelling in each temporal region. The splenic dulness was increased. The liver was somewhat enlarged. The cutaneous nodules consisted of lymphoid deposits and were entirely made up of small uninucleated round cells. The blood-count showed that the red corpuscles numbered 4,480,000 and the white corpuscles 8000 per c.mm. The white corpuscles were almost entirely (95 per cent. or more) lymphocytes, chiefly large lymphocytes, with large nuclei and clear, non-granular protoplasm.

During the next month the condition of the blood remained practically the same. The temperature was elevated, the highest point reached being 104°, and the pulse was remarkably quick (from 110 to 160); the respirations were always above the normal (from 25 to 35). The breath was foul and the gums occasionally bled slightly. No micro-organisms were detected in the blood. The eruption increased and many of the nodules became yellow, some yellowish-green, and a few on the face distinctly green. The face became much more swollen. The fleshy infiltrations of the conjunctivæ became much larger. Death occurred on June 20.

NECROPSY.—The nodules on the face, thorax, abdomen, back, and the arms were green; some of the glands in the neck were green, the tonsil was green, and the epiglottis and laryngeal mucous membrane were green. The glands, spleen, and liver were enlarged, and the gums, tonsils, epiglottis, and larynx were greatly swollen, the swelling being due to

lymphoid infiltration. The marrow of the ribs contained a few, lymphoid cells similar to those in the skin, the gums, and the blood. There were some petechiæ on the heart. The thoracic, abdominal, axillary, and inguinal glands were hardly affected. The kidneys were infiltrated in places with lymphoid deposits.

The case was undoubtedly one of chloroma. The condition of the blood corresponded to that of acute lymphatic leukæmia. It is important that the leucocytes (95 per cent. or more of which were lymphocytes) were not increased in number. The mere fact that the leucocytes were not increased in number does not exclude leukæmia. The case is remarkable because of the lesions in the skin and the peculiar infiltration of the conjunctivæ, gums, epiglottis, and larynx. Dr. Bramwell had never seen anything like the condition of these parts before, but the following case of acute lymphatic leukæmia in which exactly similar lesions were present has since come under his observation.

CASE 2.—A man, aged 33, was admitted to hospital on Sept. 29, 1901. He complained of dyspnœa on exertion, deafness, and glandular swellings in the neck. The deafness had commenced a month previously, but he had continued work until 3 days before admission.

He was a thick-set, well-nourished, muscular man. There was no anæmia—in fact, the face and lips were turgid and cyanotic. The blood was not examined during life, but after death a large excess of lymphocytes, mostly of the large form, was found. The patient was very deaf. His voice was husky and almost toneless, he was very short of breath, and the respiration was stridulous. Large, hard, painless, glandular swellings were present on each side of the neck, being especially marked

about the angle of the jaw, the face was swollen and blue, and the veins of the neck were somewhat engorged. The chest was full of bronchial râles. The pulse was 101, the temperature was 102°, and the respirations were 20. The tonsils were swollen and ulcerated. The patient died on the day after admission.

NECROPSY.—The glands throughout the body were enlarged; the spleen, liver, and kidneys were infiltrated throughout with lymphoid cells; and the bone marrow was dark purple and infiltrated with lymphoid cells. In the skin of the back and neck were several lymphoid deposits similar to those present in the first case, and the condition of the gums, tonsils, epiglottis, and larynx was also identical with that in the first case. On section some of the glands in the neck were green.

This case is a typical example of very acute lymphatic leukæmia with peculiar lymphoid infiltrations of the gums, tonsils, epiglottis, and, to a limited extent, of the skin. The two cases taken together have an important bearing upon the pathology of chloroma. Only some 25 cases have been recorded, but the disease is probably much more common than usually supposed. Many cases were no doubt missed. The case figured in the "REVIEW," Vol. IV., p. 695, and described as a "rapidly-growing tumour of the orbit" Dr. Bramwell thinks, is a case of chloroma.

The characteristic features of chloroma are as follows:

(1) *Lymphoid deposits in the orbits, temporal fossæ, and periosteum of the skull, and the resulting alterations.* In consequence of the orbital deposits, there is usually exophthalmos. As the result, partly, perhaps, of the pressure on the optic nerve and its vaginal sheath, and partly of the altered blood con-

dition (lymphatic leukæmia and anæmia), hæmorrhages in the retina and optic neuritis occur. Lymphoid infiltrations of the conjunctivæ, in some cases producing large protruding swellings giving the idea of sarcomatous growths, sometimes occur. Lymphoid infiltrations of the cornea may develop. Firm bilateral swellings in the temporal fossæ are very often present. The periosteal lesions are not confined to, though they are apparently always most marked in, the region of the skull and face. The periosteum of the bones of the vertebral column is often affected. In a recent case the spinal column was eroded, the nerve roots and spinal cord were pressed upon, and secondary ascending degeneration in the spinal cord developed. Deafness is very common; it is apparently in some cases due to pressure on the auditory nerve, in others to involvement of the middle or internal ear. Facial paralysis, due to pressure on the facial nerve, is sometimes seen. There is in many cases difficulty in breathing through the nose, the result of swelling and infiltration of the nasal passages. The tonsils are often enlarged and infiltrated. The remarkable swelling of the gums, epiglottis, and larynx, which was present in the two cases related, does not appear to have been hitherto described, but in Dr. Dunlop's case ("REVIEW," p. 146) the palate was swollen and infiltrated in exactly the same manner.

(2) *The green colour of the lesions (lymphoid deposits in the orbits, periosteal lesions, lymphoid deposits in the kidneys, liver, spleen, bone-marrow, etc.).* In many cases discolouration was noticed only after death. In some cases the urine passed during life was green. The exact cause of the green colour is unknown: Dr. Bramwell thinks that cases occur in which it is absent.

(3) *A profound blood change, characterised by anæmia, cachexia, hæmorrhages into the skin,*

bleedings from the mucous membranes, especially epistaxis, and petechial extravasations into the retina and internal surfaces (epicardium, etc.). The same profound blood change occurs in most cases of acute lymphatic leukæmia, but it is certainly not always present. In the two cases described (of chloroma and acute lymphatic leukæmia) there was little or no anæmia and there was no cachexia. The essential blood change in chloroma seems to be an enormous excess of the lymphocytes and especially of the large lymphocytes; in short, the blood seems (? always) to present the characteristic features (95 per cent. or more of lymphocytes) which are regarded as characteristic of one condition only—viz., lymphatic leukæmia. In some cases in which it was said that there was no excess of leucocytes the character of the corpuscles was not ascertained by means of stained films. Now, the first case shows that lymphatic leukæmia may be present when there is no excess of leucocytes.

(4) *Infiltration of the bone-marrow, spleen, lymphatic glands, the organs throughout the body and possibly of the skin, lymphoid deposits, as in lymphatic leukæmia.*

The question whether chloroma is a distinct disease or a variety of acute lymphatic leukæmia is difficult. The peculiar location of the lesions in the orbits and skull bones, though they are not of course confined to these parts, the green colour of the tumours, their occasional cartilaginous consistency, and the erosion of bones in some cases, are in favour of sarcoma or lymphosarcoma rather than of lymphatic leukæmia. But the condition of the blood is highly suggestive of lymphatic leukæmia. These two cases and Dr. Dunlop's case (*loc. cit.*) seem to show that no hard-and-fast line can be drawn between acute lymphatic leukæmia and chloroma. Dr. Dunlop's case is highly typical

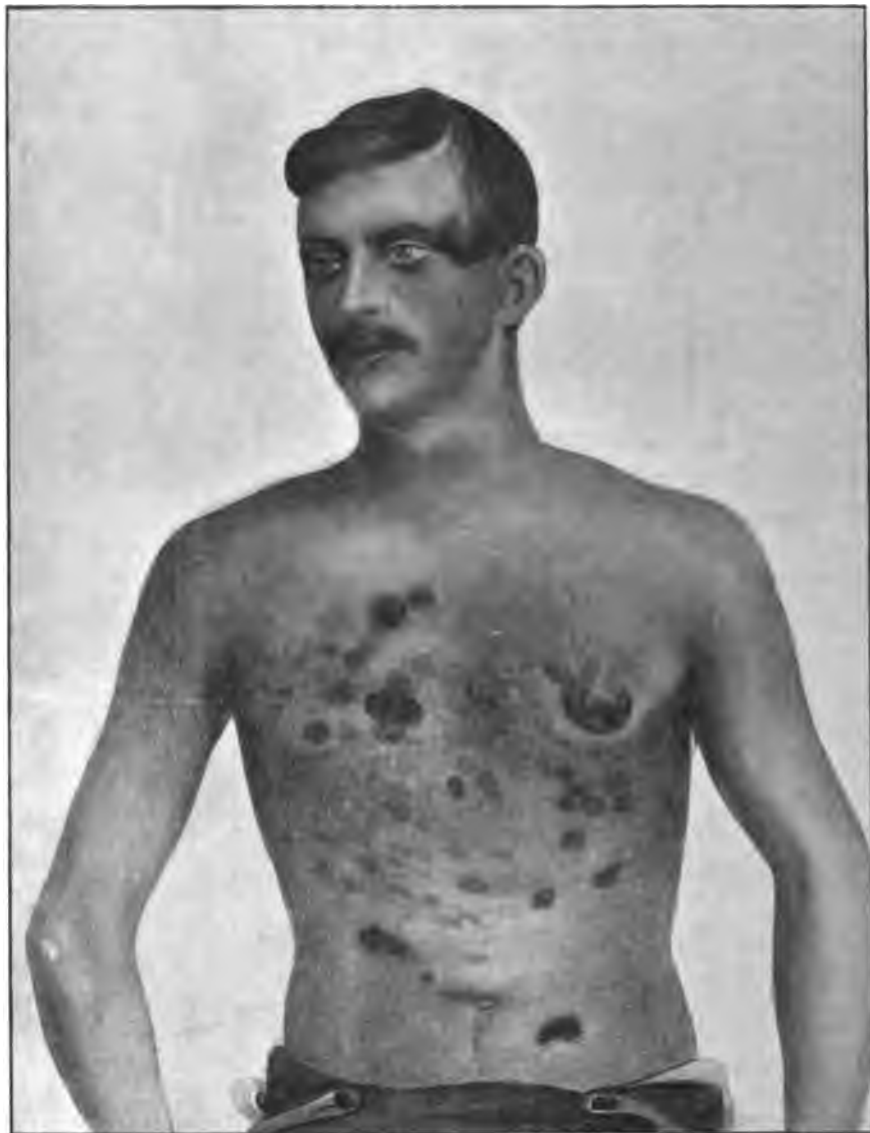
of chloroma with all the changes in the blood characteristic of acute lymphatic leukæmia. Case 2 is typical of very acute lymphatic leukæmia with peculiar lesions in the gums, tonsils, larynx, and skin, and Case 1 seems to be midway between the two. The oral lesions appear to be similar in all 3 cases. The whole question seems to turn upon the nature and definition of lymphatic leukæmia. Possibly the same condition of blood (95 per cent. or more of the white corpuscles being lymphocytes) may result from more than one pathological condition. But, practically speaking, lymphatic leukæmia and chloroma are the only known diseases in which such a condition is present. Probably more than one disease is included under the term "acute lymphatic leukæmia," or, at all events, different varieties of the disease exist. Certainly, different cases of lymphatic leukæmia present considerable differences in clinical history and course and in the relative intensity of the lesions found in the bone-marrow, spleen, and lymphatic glands.

AMERICAN JOUR. OF MEDICAL SCIENCES,
Dec., p. 836.

Leukæmia with Cutaneous Lesions.

By G. W. WENDE, M.D.

A man, aged 26, came under observation on April 26th, 1900. On Dec. 1, 1899, he accidentally noticed slight induration of the skin of the left temple. This slowly increased and in 2 months attained the size of a florin. The centre of the cheek on the same side then became affected. A hide-bound sensation was felt when the jaw was moved and the pre-auricular lymphatic glands enlarged. The post-auricular, inferior maxillary, and cervical glands were then affected in succession.



On Feb. 20, 1900, superficial, irregular, yellowish-grey spots were found over the sternum and there was a slight infiltration near the left nipple. Other spots appeared on the chest and back. The axillary glands became enlarged and tender.

The illustration shows the patient when he came under observation. The general tint of the skin was ruddy as though sun-burned while the areas on the chest were as brown as burnt sienna. The initial lesion on the left temple formed an oval, dusky protuberance, 10 c.m. in diameter, non-adherent to the deep parts. On the left cheek was a deep-seated infiltration from $3\frac{1}{2}$ to 4 c.m. in diameter. In the left infra-mammary region were two lumps about the size of a filbert covered by normal skin. Around the nipple was a large patch similar to that on the temple. On the lower abdomen were 7 deep-seated nodules varying in size from that of a pea to that of a hickory nut. The largest was cyanotic and brown. The chest and back were mottled with numerous pigmentary stains and blotches, principally of a chocolate colour. All the superficial lymphatic glands were enlarged, the cervical especially, and those on the left side of the body more than those on the right. The glands were readily separable, there being no evidence of adhesions. The blood showed no marked alterations—erythrocytes 5,128,000, leucocytes 4000, hæmoglobin 88 per cent., small lymphocytes 27 per cent., large and transitional lymphocytes 4 per cent., polymorphonuclear neutrophiles 68 per cent., and eosinophiles 1 per cent.

Six minims of Fowler's solution were injected hypodermically every day, and the dose was increased by 2 drops weekly. Within 3 weeks improvement was evident, new lesions ceased to form, the old ones diminished, and all assumed a similar colour which in 4

weeks changed to dark brown, and finally began to be absorbed at the periphery. After 6 weeks the skin was normal except for the pigmentation. But on June 4, the glands assumed their former proportions. After 36 hours however the enlargement subsided. All went well until July 1, when it was noticed that the back, chest, and hypogastrium, were of a light bronze colour. A growth suddenly appeared on the scalp, and 2 on the chest. Another lymphatic enlargement ensued involving the right inguinal glands. The patient lost strength and became drowsy. The mucous membranes became pale, and the glands further enlarged. Petechiæ appeared on the shoulders. Fresh hæmorrhages occurred daily on the back and chest, and gradually extended to the arms. Conjunctival and retinal hæmorrhages were seen. Examination of the blood on July 10, showed hæmoglobin 40 per cent., and per c.mm. red corpuscles, 1,936,000, white corpuscles, 34,000, macrocytes and microcytes in moderate numbers, a few poikilocytes, and 102 normoblasts. There were 95.5 per cent. of small lymphocytes; 0.7 of large lymphocytes; 0.4 of eosinophiles; and 3.4 of polymorphonuclear neutrophiles. The spleen was enlarged. The cervical glands rapidly increased and extended in a festoon from ear to ear. The gums were blue, swollen, and spongy, and readily bled. The teeth were covered with sordes, and the lips were dry, and the throat was sore. Within a week the tonsils enlarged until they touched each other. On July 19, after a severe paroxysm of coughing, a purpuric eruption appeared upon the cheeks, neck, and back. The gums continued to swell until they nearly covered the teeth, ulcerations were discovered around the bicuspid, and the bronzing of the skin became more and more pronounced. On the 20th he complained bitterly of pain in the neck. The temperature was 99.5° and the pulse 120,

and a slight outbreak of purpura occurred. Microscopically the blood was pale and thin; coagulation took place slowly and irregularly. There were red corpuscles 1,776,000, microcytosis and macrocytosis, poikilocytes in fairly large numbers; nucleated cells, 225 to c.mm., a number of polychromophiles, leucocytes, 45,000; small lymphocytes, 95·3 per cent.; large lymphocytes, 1·6; polymorphonuclear neutrophils, 2·3; eosinophiles, 0·6; myelocytes, 0·2. The temperature was 99·8°, and the pulse 124. The lower lip became suddenly œdematous, and thrice the normal size. On the 22nd there were deafness of the left ear, and tinnitus from hæmorrhages in the meatus and on the tympanum. On the 26th deglutition was painful, and an ulcer with sloughing edges formed on the right tonsil. The temperature was 100°, and pulse 140. On the 27th the whole surface was reddened from purpura. There were diarrhoea and dark coloured urine. The glands had diminished. Death occurred on July 30th.

NECROPSY.—The pleuræ were studded with lymphatic nodules. The peribronchial glands varied in size from that of a pea to that of a chestnut. The lymphatic follicles of the stomach and intestines and the mesenteric glands were enlarged. The spleen weighed 1,500 gm. Microscopic examination showed that the cutaneous lesions consisted of lymphoid cells in the cutis and subcutaneous tissue. A few leucocytes were congregated about the blood vessels in apparently normal skin. The cellular elements of the lymphatic glands were greatly increased. The spleen showed similar changes. The Malpighian bodies were often twice the normal size, and the pulp was crowded with lymphocytes. In the bone-marrow lymphocytes were present but not conspicuous. The liver and kidneys showed lymphatic infiltration.

This case illustrates strikingly leukæmic tumours of the skin and their disappearance under arsenic. Cases of leukæmic infiltration of the skin have been observed since 1876, first by Bisiadecki, then by Hochsinger, Schiff, Phillipert, and Oliver. Kreibich has reported a case in which pendulous masses, varying in size from that of a pigeon's egg to that of an adult fist, were found on the face (which in the majority of cases was the seat of invasion). The cutaneous tumours of leukæmia and lymphadenoma appear to be histologically identical. In the present case there was dual pigmentation of the skin—primary, which appeared early in circumscribed areas and was first yellow and then darkened, and secondary or purpuric, which covered the chest and back and effaced the primary pigmentation. As the blood was normal at the first examination, the writer regards the case as an example of the conversion of Hodgkin's disease into leukæmia—a very rare event.

WIEN. KLIN. WOCH., Jan. 2, p. 1, and
Jan. 9, p. 40.

Myiasis Intestin lis.

By Dr. H. SCHLESINGER and Prof. A.
WEICHSELBAUM.

The question whether disease of the gastrointestinal tract can be produced by the larvæ of flies has been much disputed. The following case is regarded by the writers as conclusive evidence that the larvæ of flies may not only live in the intestine but produce serous lesions :—

An engineer, aged 22, in the spring of 1900, occasionally noticed blood in the stools. This disappeared until Nov. when after a short stay in Pilsen the stools became offensive and contained blood and pus. The bowels acted

twice or thrice daily, but there was no tenesmus, pain, or pyrexia. On Dec. 8 the rectal mucosa was seen through a speculum to be softened, inflamed, and covered with non-adherent membranous patches. Neither amœbæ nor tubercle bacilli were found in the membranes or stools. On Dec. 19 tenderness and a firm cylindrical swelling over the descending colon were noted. On Dec. 26 rectal injections of a 2 per cent. solution of gelatine were given; the pus and blood disappeared immediately and the mucus in about 20 days. The patient got up and increased in weight. In May, 1901, however there was a relapse of the intestinal symptoms, with intense pain in the knees. On May 26 the stools, shortly after being passed, contained numerous living maggots which were thought to be probably the larvæ of *musca vomitoria*, the common blue-bottle fly. All stools were then passed into a porcelain vessel cleaned with boiling water in order to exclude accidental contamination by flies. In spite of this four days later the amount of blood and pus increased and the stools immediately after being passed contained a number of living maggots about two mm. long. The whole stool appeared to be alive. A third batch of larvæ was passed on June 1. The stools which were passed in the intervals were free from parasites. The condition improved from June 2 onwards, but though the appetite was excellent, there was no increase in weight. In the middle of July the administration of santonin and castor oil on three successive days followed by an enema brought away some scybala and then a pulaceous stool containing blood, pus, and innumerable maggots 3 to 4 mm. long. Some were preserved and grew rapidly; on the fourteenth day they gave rise to the perfect imago, which was identified by Prof. Brauer as

sarcophaga carnaria. It is frequently difficult to identify larvæ unless an imago can be reared from them, and probably that the maggots originally passed were larvæ of the *sarcophaga carnaria* and not as supposed of the *musca vomitoria*. No eggs were present. Towards the end of July the descending colon again became tender and there were pyrexia and emaciation. The urine contained casts but no albumin or sugar. During Aug. painful peristaltic movements appeared in the ileo-cæcal fossa and over the transverse colon, and pointed to multiple intestinal obstruction. The general condition deteriorated, the left iliac vein became thrombosed, and death occurred on Oct. 15.

NECROPSY (17 hours after death).—The only changes of importance were in the large intestine. In the right iliac fossa and near the descending colon were fæces in the peritoneal cavity; there was however no peritonitis, and the perforation probably occurred after or immediately before death. The whole of the large intestine was distended, and there were adhesions between the hepatic flexure and the liver and between the great omentum and the ascending colon. The large intestine was almost empty except (1) at the junction of the hepatic flexure with the transverse colon, (2) a short distance above the ileo-cæcal valve, and (3) in the descending colon. At each of these places the lumen was obstructed by impacted fæces. This impaction was due to ulceration and consequent atony. The ulcers affected the whole circumference of the colon and were several inches long. The edges were undermined, and the bases were of varying depth and intersected by transverse fibrous trabeculæ. In places they were covered with numerous polypoid excrescences (Fig. 1). The muscularis mucosæ was mostly absent. The subserous and retro-

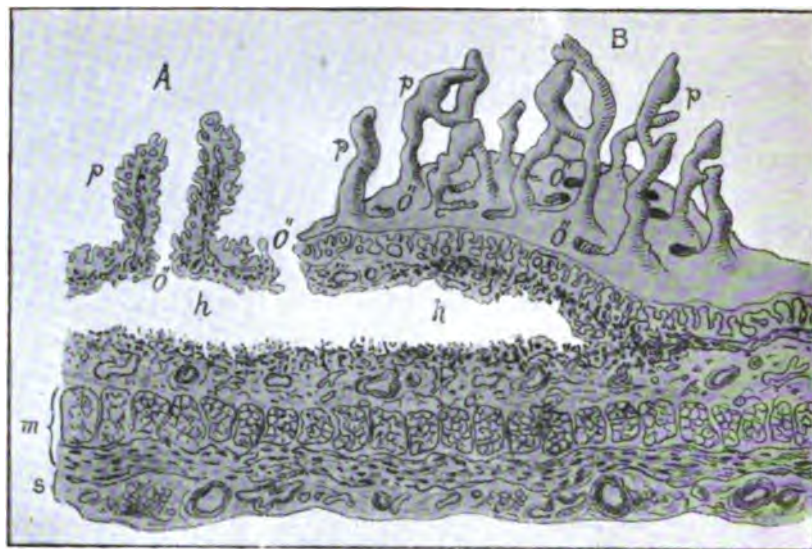


FIG. 1.—Semi-diagrammatic representation of a small ulcer; formation of a submucous cavity with perforation into the lumen of the intestine.

A, view of a vertical section; B, surface view of the mucosa; h, abscess cavity in the submucosa with small-celled infiltration of the wall; ö, perforation; p, polypoid excrescences; m, muscularis mucosae; s, subserosa and serosa.

peritoneal tissues were thickened. Where the mucous membrane was partly preserved, the ulceration could be seen to have originated in small submucous abscesses (Fig. 2). The superficial layers of the ulcers were crowded with bacteria but no maggots or eggs remained. The intervening mucous membrane was healthy except for slight inflammatory swelling. There were enlarged mesenteric glands in the neighbourhood of the ulcers but there was no trace of tuberculosis.

The writers hold that death was due to the ulcers and the consequent chronic obstruction caused by myiasis. Dysentery could be excluded by the isolated character of the ulcers and by the immunity of the rectum and sigmoid flexure. The lesions most closely resembled tuberculous ulcers, but tubercles were absent. Syphilitic ulcers have a great tendency to cicatrize, and in a chronic case such as this would probably have been quite or almost healed. The patient probably

swallowed living maggots (the *sarcophaga* is viviparous) which bored their way into the wall of the intestine by their sharp chitinous hooks and were, therefore, not evacuated until partial necrosis of the intestinal wall had occurred.

Though more than 100 cases of myiasis have been reported during the last century, none are comparable with this case. In a number of acute cases the symptoms were those of acute gastritis and ended when the maggots were evacuated by vomiting or the stomach tube. Acute myiasis of the intestinal tract usually produces a variety of ill-defined intestinal symptoms of which violent colic is the most constant. Chronic myiasis is much rarer. In a case published by Henschen (*Wien. Klin. Rundschau*, No. 33, 1896,) maggots were present for years and produced the symptoms of mucous colitis. Recovery followed the administration of male fern. Among some soldiers stationed on the Red Sea

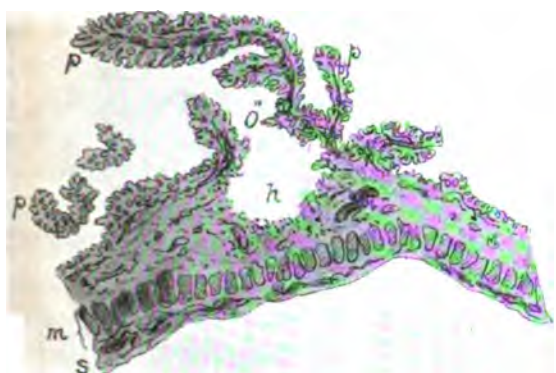


FIG. 2.

Vertical section through a portion of a small ulcer with an abscess in the submucosa. References as in Fig. 1.

Pasquale observed a number of cases of which the following is an example. (*Internat. Med. Cong.*, 1894):—A man had repeated pyrexial attacks which were followed by hypogastric pain. The tongue was clean and the appetite good, but there were anæmia and emaciation. *Cercomonas intestinalis* and the eggs of the *trichocephalus dispar* in the stools were the only indications of intestinal parasites. The administration of santonin, however, caused about 300 living maggots to be expelled with a stool which was passed in the presence of the surgeon.

In all the cases of subacute and chronic myiasis a long period elapsed between the beginning of the symptoms and the first evacuation of the maggots per os or per rectum. In the writer's case it was certainly months and possibly as much as a year. In all the cases the maggots appeared intermittently, and there were generally blood and mucus in the stools or vomit. The passage of pus has not been noted previously. Headache or neuralgic pains were frequent. In a few cases the passage of maggots has been periodical. Thus a woman passed maggots

regularly every summer for four years. In another case the larvæ of *authomyia* were evacuated in May and June for many years.

It is difficult to explain how the larvæ gain access to the intestine. Most authorities believe that the eggs or living larvæ are swallowed. Formerly it was thought that they entered through the anus. Impure drinking water, raw meat and vegetables, cheese, and milk may all contain flies' eggs or maggots. Several flies, the larvæ of which are found in the intestine, and among them the *sarcophaga*, are viviparous. The larvæ are swallowed in such cases. Usually they perish immediately; otherwise myiasis would be extremely common. Under certain not understood conditions the eggs or larvæ escape destruction. In the acute cases they are immediately rejected. In the chronic their prolonged existence is inexplicable. For example, in the writer's case the last larvæ appeared at least nine weeks after the first, but were of a size normally attained shortly after birth. That flies should remain alive in the intestine and give birth to maggots appears incredible. Either the unusual conditions prevented the development of the larvæ and the first and last batches were of about the same age, or the larvæ multiplied in the intestinal canal by pædogenesis. But this mode of reproduction has not been observed in *sarcophaga carnaria* or any of the 34 or more varieties of maggots found in the intestine. These difficulties led some authorities, notably Prof. Gärtner (*Wien. Med. Woch.*, Jan. 18, p. 113, and Jan. 25, p. 164), to reject the writers' explanation and to maintain that the larvæ of a viviparous fly might be deposited on fæces immediately after being passed. But this supposition hardly accounts for the presence of several hundred maggots not only on, but in the substance of the fæces.

The treatment consists in the administration of sanatonin or male fern and enemata of dilute nitrate of silver, thymol, or tannin. In the gastric form emetics and irrigations are indicated. Joseph and Staniek washed out 100 or more maggots from a stomach. Prophylaxis consists in the protection of meat, fruit, and sweets from flies by suitable coverings, and in the thorough washing of fruit and vegetables.

WIEN. MED. WOCH., Oct. 5th, 1901, p. 1849,
Oct. 12, p. 1915, Oct. 19, p. 1956,
and Oct. 26, p. 2013.

**Etiology and Treatment of Cystitis :
Use of the Curette.**

By Prof. CARLO PARASCANDOLO
and
Dr. EUGENIO MARCHESE.

Cystitis is not produced, as a rule, by the mere penetration of organisms into the bladder; the vitality of the mucous membrane must be previously lowered. But the proteus vulgaris and gonococcus may excite cystitis in a healthy bladder. Under suitable conditions a number of bacteria—streptococcus and staphylococcus pyogenes, diplococci, bacillus coli, gonococcus, B. typhosus, and B. tuberculosis—may produce cystitis. They may reach the bladder (1) through the urethra, (2) by direct extension from neighbouring organs, (3) through the kidneys, and (4) through the circulation. Bacteria may pass through the kidneys without causing appreciable damage; bacteriuria, however, usually causes more or less cystitis. The streptococcus may be excreted in the urine in erysipelas, the pneumococcus in pneumonia, and the typhoid bacillus is found in 30 per cent. of all cases of typhoid fever. Hæmatogenous infec-

tion of the bladder is practically limited to tuberculosis. The necessary lesion of the vesical epithelium may consist either in direct mechanical, chemical, or thermal injuries, or in retention of urine. In animals, if the urethra is ligatured the introduction of bacteria or their toxins into the bladder produces purulent cystitis. The occurrence of ammoniacal decomposition depends on the variety of organism. The staphylococcus and streptococcus pyogenes, the B. typhosus and B. coli in pure cultures do not decompose the urine, however severe the cystitis. In acute cystitis the anatomical changes are usually most marked on the trigone; they may range from hyperæmia to multiple abscesses and necrosis. In chronic cystitis there is a slimy or fibrinous exudation. The gangrenous forms depend chiefly on the B. coli, the ulcerative on the constant irritation of calculi or other injuries. If ulcers are present there are often ragged granulations and polypoid excrescences. Tuberculous cystitis is frequently primary; it begins as small granulations in the epithelium and progresses to ulceration. The seats of election are the trigone, the neighbourhood of the orifices of the ureters, and the neck. The urine in tuberculous cystitis is clear unless there is hæmaturia.

TREATMENT.—Alkalies and hyoscyamus are now almost abandoned, and balsams are employed only in gonorrhœal cystitis. Urotropine is valuable in many varieties of cystitis, but is useless in tuberculosis, for which only creasote and guaiacol carbonate are effective. Salol is useful in all forms.

Of injections silver nitrate and perchloride of mercury solutions give the best results. Rovsing advocates Guyon's method of injection of 10 to 30 drops of from 2 to 10 per cent. solution of silver nitrate into the empty bladder in all forms of cystitis except the

tuberculous. Cystitis which resists silver nitrate may be cured by injection of a 1 in 500 solution of perchloride of mercury, which should be left in the bladder for 5 minutes, and then washed out with boracic lotion. Perchloride gives excellent results in gonorrhœal and painful forms of cystitis. The instruments required for intra-vesical injections are a glass syringe with vulcanite mounts and an olivary catheter not larger than 12 to 14 of the French scale. The injections of silver nitrate should be given daily, those of perchloride of mercury every other day. It is well to begin with a 1 in 4000 solution of perchloride, and gradually to increase the strength to 1 in 500. Four c.c. should be injected into the bladder, and 10 to 15 drops into the neck of the bladder and posterior urethra. After the injection the patient should assume for a time the lateral and prone positions. Neither 4 per cent. solutions of boracic acid nor 10 per cent. of emulsions of iodoform have any bactericidal action. Drugs are usually given simultaneously. In chronic cases injections seldom more than alleviate the symptoms.

Vesical irrigations with 2 to 4 or more pints should then be tried. A variety of drugs, boracic acid, alum, salicylate of sodium, tannic acid, sulpho-carbolate of zinc, etc., are used. The object is to remove the inflammatory products mechanically, rather than to destroy bacteria in situ. If silver nitrate (1 in 500) is chosen, the bladder should be irrigated immediately afterwards with a solution of sodium chloride. If the irrigations are painful 100 gm. of a from 2·5 to 3 per cent. solution of antipyrin may be injected before and after their use, and left in the bladder for 15 to 20 minutes until the mucous membrane is anæsthetic.

Operative treatment is indicated if other measures fail. Rest should be given the bladder by the introduction of a catheter which should

be retained. This "permanent drainage" is especially indicated in painful chronic cystitis. If it fail, some form of perineal section with dilatation of the neck, or, in women the artificial production of a vesico-vaginal fistula, justifiable. These measures, however, give unsatisfactory results in septic cases, necessitate the prolonged assumption of an uncomfortable position by the patient, and do not lend themselves to the local treatment of the vesical lesions. Supra-pubic cystotomy is, therefore, usually preferable. Its advantages are that (1) the bladder can be more thoroughly explored through a supra-pubic incision, (2) a permanent drain can be introduced and the bladder given complete rest, and (3) direct topical applications to the diseased parts may be employed. The operation is especially indicated in the early stages of tuberculous cystitis. If the mucous membrane is intensely hyperæmic it may be cauterised through the supra-pubic incision with chloride of zinc, 20 to 30 per cent. solutions of lactic acid, or a 1 in 500 solution of perchloride of mercury. If fungous masses are present on the trigone they may be destroyed with Paquelin's cautery or chemical caustics. Delagenière and Greiffenhagen excise the whole of the diseased vesical mucosa.

Finally the mucous membrane may be curetted. This has been done by Cumbston in 10 cases with the best results. He holds that the morbid changes in chronic and tuberculous cystitis are situated almost entirely in the mucous membrane, and even when extensive are most marked in the trigone, near the orifices of the ureters and the neck of the bladder—parts all accessible to the curette. In the female if the disease is not extensive scraping the bladder per urethram may suffice. In the male and in all severe cases in the female supra-pubic cystotomy is required. An anæs-

thetic is given and the bladder irrigated with a 3 per cent. boracic lotion. It is then emptied completely. A Recamier's uterine curette is introduced, and the anterior vesical wall is thoroughly scraped. The detritus is removed by a normal saline injection before the posterior wall and the neck of the bladder are similarly treated. The pubes prevents the anterior wall from yielding unduly before the curette, but while the posterior wall is being scraped it should be supported by 1 or 2 fingers in the rectum or vagina. The lateral and superior walls are less accessible, but they are less affected in chronic cystitis. The bladder is then well irrigated, and a catheter is tied in and left for 12 to 15 days. Hæmorrhage, if it occurs, is arrested by a 4 per cent. antipyrin or a concentrated ferripyrin solution. No pyrexia should follow the operation, which even in tuberculous cystitis greatly relieves the symptoms. Naturally if the cystitis depends on calculi, urethral stricture, or enlarged prostate these conditions must be first treated.

The writers have tested the value of the method experimentally: purulent cystitis was produced in 10 dogs by the injection respectively of cultures of staphylococci, streptococci, *B. coli*, *proteus vulgaris*, pus, and urine into bladders, the vitality of which had been lowered by ligature of the penis, the injection of silver nitrate or turpentine, and the introduction of an irregularly shaped stone. In every case the cystitis became chronic. The bladder was then curetted by Cumbston's method, in the bitch per urethram in the dog after supra-pubic cystotomy. It was sutured immediately, and healed by first intention. All the symptoms of cystitis rapidly disappeared, and 15 to 20 days after the operation the urine was clear or but slightly turbid, the reaction was acid, though in 8 out of the 10 cases it had previously been alkaline, and the

pus had disappeared except in 2 cases in which there were traces. A few cocci and bacilli remained, and in 1 case the staphylococcus pyogenes.

GAZ. HEB. DE MÉD. ET DE CHIRURG.,
Feb. 20, p. 157.

Chronic Trophic Œdema.

E. FEINDEL.

H. Meige in 1898 applied the term trophic œdema to some cases of white, hard, painless chronic œdema of the limbs. The affected parts were enlarged. The skin was white, somewhat thickened, and tense. It showed neither excoriations nor marbling. It could not be pinched up between the fingers, nor made to move upon the muscles and bones beneath it. It was difficult to produce pitting by pressure. There was neither pain nor tenderness.

Trophic œdema usually begins insidiously. Sometimes it does not appear till the age of puberty. In other cases it is noticed earlier, and is perhaps congenital. It is a chronic disease. Once developed it undergoes only slight changes, and persists indefinitely without endangering life. Its chronicity distinguishes it from all transitory œdematous affections, which are sometimes accompanied by pyrexia, alterations in sensibility, colour of the skin, pain, or eruptions. It closely resembles elephantiasis Arabum, but the *filaria* has never been found in the blood. No mechanical or constitutional cause for the œdema can be found. Meige published a case in which the whole of the right leg from the groin to the toes was greatly swollen, so that all its outline was disfigured. (*Nouvelle Iconographie de la Salpêtrière*, 1899). Thigh, knee, leg, and foot were œdematous, with ridges as in



CHRONIC TROPHIC ŒDEMA IN TWO SISTERS.

elephantiasis. The dorsal aspect of the foot was swollen, and the toes were thickened. At the ankle the swelling was extreme, and the integuments hung in swollen folds which masked the malleoli and the tendo Achilles. The subcutaneous edge of the tibia could not be felt. The outline of the knee was concealed by folds, and the thigh was a huge cylinder. The swelling ceased abruptly in the groin. The left leg was unaffected. (Fig.)

The sister of this patient had also trophic œdema of both lower limbs. (Fig.) Several other members of this family were affected. A brother had a foot and the lower part of the leg involved; and the mother, both feet and legs. Two uncles, the grandfather, and the grandmother, in all, 8 members of the family, were affected.

Trophic œdema may affect only one member of a family. Cases of this kind have been reported by Vigouroux, Prothon, Hertoghe and others. But it occurs as a hereditary and family dystrophy. To Meige's cases may be added those of Milroy—22 in one family in 6 generations, and those of Lannois—4 cases in 3 generations. There is also a congenital trophic œdema, which may be hereditary—so called congenital elephantiasis. Nonne has described several cases. In 3 generations 7 children were born with this condition sometimes in one lower limb, sometimes in both. One of the children had general œdema and was besides anencephalic. Tobiesen of Copenhagen recorded the case of 4 members of one family, distributed through 3 generations, who had at birth œdema of the lower limbs which persisted. The affection is a kind of dystrophy. The connective tissue is known to be affected in some trophic affections and sometimes dystrophies of connective tissue,

muscles, and bones, co-exist. In chronic trophic œdema the connective tissue is chiefly involved. The cause is probably an alteration in the trophic centres of the subcutaneous cellular tissue in the grey matter of the cord. Mabile has recently published a case of trophic œdema of both lower limbs in a woman aged 49, with hemiplegia and chorea. Infectious diseases—typhoid fever (Meige), scarlatina (Lannois), small-pox (Rapin), measles (Hertoghe)—have several times been noticed to precede the appearance of trophic œdema. Probably the infection has in these cases acted upon a predisposed spinal cord.

Trophic œdema may be associated with other affections of nutrition, *e.g.* osseous (Vidal) or muscular ones. Hertoghe's observations go to prove the kinship of trophic œdema with other abnormalities of the cellular and cutaneous tissues *e.g.* trophic affections of the hair, nævi, and warts. Trophic œdema does not seem to have any affinity with myxœdema, as thyroid treatment is useless.

Trophic œdema affects a whole limb, or the segments of a limb. This segmental distribution is another argument in support of the spinal origin. As a rule the condition affects the lower limbs; but in two cases of Rapin the upper limbs were affected. In his first case the hypertrophy was a "cross" one, the right arm and the left leg being affected. In the other the two upper limbs were involved equally. There is also a facial trophic œdema. In Rapin's second case a cheek and the corresponding ear were œdematous. In a case of Hertoghe's the condition was confined to one cheek. Frequently the affection progresses in spite of treatment.

See also "REVIEW," Vol. IV., p. 99.

M E D I C I N E .

Hæmorrhagic Pancreatitis in Malaria.—By W. G. Ross, M.D., and C. W. Daniels, M.B. (*Jour. of Tropical Med.*, Feb. 15, p. 51).—

An English sailor, aged 23, who had been at Brindisi, was brought to hospital on a stretcher from his ship, which had arrived at London from Port Said. Three days before he was taken ill with abdominal pain, hæmatemesis, and melæna. The two latter continued until admission.

The temperature was 102·8°, the skin moist, and the spleen enlarged. He vomited 8 oz. of reddish-brown fluid with a few dark coloured clots, and passed 2 stools of similar character. Next day the temperature was 96·4°. He vomited 10 oz. of reddish-brown fluid and a few clots, and in half an hour passed 4 stools of the same character, the quantity in all being about 10 oz. He had great abdominal pain, the features were pinched, the respiration was hurried, and the pulse was 160. He was bathed in perspiration. The abdomen was tender, especially between the umbilicus and pubes. The lips and finger nails became cyanosed. Unconsciousness, collapse, and death followed.

NECROPSY.—There was blood-stained effusion under the peritoneum in the vicinity of the pancreas, at the base of the mesentery, and in small patches on various parts of the visceral peritoneum, but no actual hæmorrhages. The whole extent of the stomach and intestines was dusky-red. The pancreas was deep-red, in sections almost black, but was not softened. The stomach and intestines contained much blood-stained fluid. The whole internal surface of the stomach and small intestine was intensely congested. This congestion was greatest in the stomach and duodenum, and gradually diminished in intensity towards the ileum. The large

intestine was similarly affected in less degree. The liver was enlarged, soft, and friable. It weighed 5 lb. The spleen was red on section, weighed 15 oz., and was soft. The other abdominal viscera were healthy.

Microscopic examination of the pancreas showed numerous extravasations of blood; some, particularly those under the capsule, were extensive, but the greater number were small, being between the lobules, and sometimes separating individual cells. In the portions examined the cells and fat were necrotic. The striking feature of the sections was the manner in which all the smaller capillaries were blocked with autumnal malarial parasites. The majority were either sporulating or in a stage just before sporulation. (Figs.) The blood corpuscles in the larger vessels and in the extravasated blood did not contain parasites. The stomach and intestines showed a similar accumulation of parasites in the capillaries. In the mucosa, and to a small degree in the submucosa, were numerous blood extravasations. The superficial layers of the mucosa were necrotic, and had been invaded by microbes of several species, but a streptococcus was the most abundant. In the spleen, liver, kidneys, and lymphatic glands an occasional malarial parasite was found, but in no part was there any accumulation similar to that in the pancreas and intestines. No microbes other than malarial were found in any organ but the alimentary canal.

The probable sequence of events was as follows:—Malarial infection took place at Brindisi. During the voyage home the disease remained latent, or at any rate, the parasites were not in sufficient number to cause marked symptoms. Sporulation took place in the capillaries of the intestines and pancreas, blocking the circulation

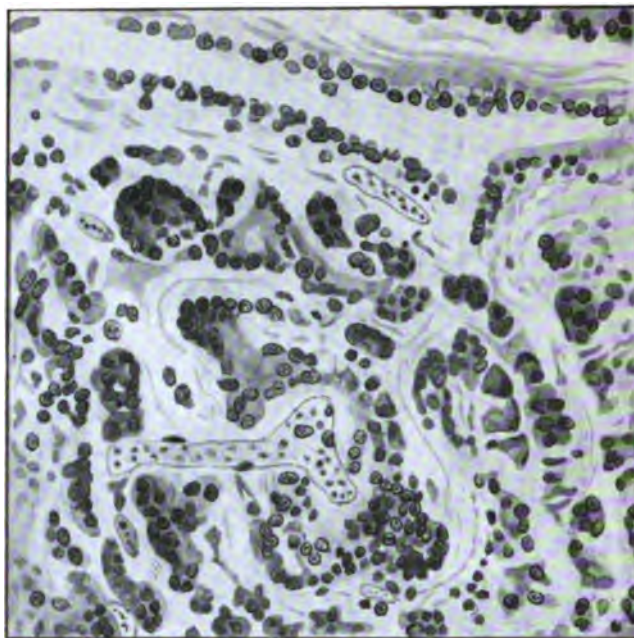


FIG. 1.—Section of pancreas, showing capillaries full of parasites.
In the upper part is a pancreatic duct.



FIG. 2.—Oblique longitudinal section of single capillary, showing parasites in various stages.
Enlarged from Fig 1.

and producing blood stasis, and sufficient damage to the mucosa to allow the intestinal microbes to invade it, causing superficial necrosis. Whether the pancreatitis was directly due to the malarial parasites, or of secondary bacterial origin cannot be said.

Cases of hæmorrhage into the alimentary canal have been recorded by many observers as a rare complication of malaria. Hæmatemesis, melæna, or motions of a dysenteric character,

have been observed. Recovery is the rule, but in fatal cases the capillaries have been found, as in this case, blocked with corpuscles containing malarial parasites. In some of the cases collapse has been the prominent feature. In one case under the care of Dr. Daniels there were both hæmatemesis and passage of blood by the rectum, associated with profound collapse. This hæmorrhage did not recur, as quinine was given hypodermically; but subsequently there was

methæmoglobinuria, and the case terminated fatally from suppression of urine. The causation of the algid forms of malaria is probably closely connected with an accumulation of the parasites of malaria in one of the abdominal viscera instead of in the commoner sites, the brain or lungs.

The main points of interest in this case are:—(1) The unusual site of the sporulation of the parasites, viz., the pancreas. (2) The hæmorrhagic pancreatitis associated with the condition. (3) The absence of any previous symptoms of malaria. (4) The extensive invasion of the alimentary tract by the malarial parasites, and the secondary necrosis of the mucosa, though this must have been mainly due to the bacterial invasion.

Typhoid Mastitis.—Thomas McCrae, M.B. (*Johns Hopkins Hosp. Bulletin*, Jan., p. 20).—Mastitis is apparently one of the rarest glandular complications of typhoid fever, and occurs much less frequently than orchitis, thyroiditis or parotitis. The cases here reported are the first in over 1000 cases of typhoid fever in the Johns Hopkins Hospital. Out of 1626 cases of typhoid fever Berg found mastitis in 4. Curschmann in his work on typhoid fever in Nothnagel's system alludes to the rarity of the condition, although a slight degree of swelling of the breast is, in his opinion, not uncommon. He mentions 2 cases of mastitis in young men.

CASE 1.—A coloured female, married, aged 27, was admitted on July 19, 1900, the 14th day of an attack of typhoid fever. She had 3 children, the oldest of whom was 9, and the youngest 5. In the two years before admission she had two miscarriages. On the 29th day the first signs of breast trouble were observed. The temperature for a week before had not been above 102°, and averaged from 100° to 101°. On the 30th day in the upper outer quadrant of the left breast was an indurated, painful, and very tender mass

of the size of a hen's egg. On the 35th day an incision was made in the left upper quadrant and a considerable amount of pus obtained.

CASE 2.—A married woman, aged 25, was admitted on July 25, the fifth day of the disease. She had one child 18 months old, which she had nursed for 10 months. There were rose spots, enlarged spleen, and Widal's reaction. The temperature ranged from 102° to 103°. The leucocytes varied from 3300 to 3500 per c.mm. On Aug. 2 she complained of severe pain in the right breast, where there was a small painful induration in the upper right quadrant. The leucocytes were 8000 per c.mm. Next day they were 10,000. On Aug. 5 the induration had almost disappeared and the leucocytes were 5500. On Aug. 7 complaint was made of pain in the left breast and a condition similar to that in the right was found. This also disappeared after a few days. The temperature had apparently not been influenced, and on Aug. 9 it had fallen nearly to normal. After this it gradually rose and continued elevated for nearly 3 weeks, there being a typical relapse with fresh rose spots. Recovery was slow, and the temperature had not reached normal when, on Sept. 10—the 52nd day—she complained of pain in the left breast. A tender induration about the size of a hen's egg was found in the upper outer quadrant. The axillary glands were not enlarged. The temperature was about 101°. The leucocytes were 18,000 per c.mm. On Sept. 12, the temperature rose to 103°, but fell on the next day and the swelling rapidly diminished.

The point of special interest is the occurrence of mastitis without suppuration thrice during the attack of typhoid fever. Beyond the pain and discomfort it had apparently no influence on the course of the disease. The left breast seemed perfectly normal between the two attacks. The leucocytosis is to be noted.

CASE 3.—A married woman, aged 32, was admitted on Sept. 5, 1901, the 15th day of the disease. She had nursed her child, aged 20

months, up to the day of admission. As he had a temperature of 103° and diarrhoea, it was at first thought that he also had typhoid fever, but the subsequent course was that of gastro-enteritis, and he improved rapidly. His blood did not give Widal's reaction. There was practically no secretion from the breasts. The temperature reached normal on Sept. 17. On Sept. 21, she complained of pain in the right breast, and in the outer lower quadrant was swelling and the overlying skin was red. On the following day there was fluctuation. The leucocytes were 8000 per c.mm. The abscess was opened and about 40 c.c. of pus were obtained. Cultures from this showed staphylococcus albus but no typhoid bacilli. The temperature continued normal throughout the attack of mastitis. The further course was uneventful.

In the reported cases among the 16 in which the sex is mentioned, 4 were males. The age varied from 15 to 40. Among the females there does not seem to have been any special association with previous suckling, as, with the exception of the last case, none had recently suckled. No case appears to have been recorded in which typhoid bacilli were present in the milk. But there are instances of Widal's reaction being given by the blood of a suckling infant, which had apparently been acquired through the milk.

In 12 cases of which there are full reports both breasts were involved in 6. Of 14 cases of which there are complete notes suppuration occurred in 7. It was present in both breasts in only one case. There are notes of the bacteriological findings in 5 cases, in one of which abscess formation did not occur, but fluid was obtained by puncture. In 3 staphylococci were found and in 2 typhoid bacilli.

The period of the disease at which the mastitis occurred was in the 14 cases in which the data are given, with but one exception, the end of the third week or later. The exception is the second case here reported in which the mastitis began on the thirteenth day. In

several instances the temperature had become normal before the onset of the complication. In 2 patients it was associated with a relapse. The effect on the temperature was variable; in one not causing any elevation, in others causing a rise to 104° .

Leucocytosis was present in 2 out of 4 cases. That suppuration may occur without marked increase in the number of leucocytes is shown by 2 of the cases here reported, in which the leucocytes were not above 8000 per c.mm. This, of course, may mean a slight increase when the diminished number usually found in typhoid fever is remembered. From the second of the present cases it is evident that leucocytosis may occur without suppuration. In no instance did the mastitis appear to have any unfavourable influence on the course of the disease beyond prolonging convalescence.

F. Davis, jun., H. S. Patterson, and A. W. Hewlett (*American Jour. of Med. Sciences*, p. 778).—A woman, aged 34, was admitted to hospital on May 25, in the third week of an attack of typhoid fever. The temperature was 105° , rose spots were present, and Widal's reaction was obtained, but blood cultures made on May 27 and 31 did not yield the typhoid bacillus. On June 9, the thirty-sixth day of the disease, the temperature became normal. Three days later the patient complained of pain in the left breast. On June 14 the breast was swollen, a hard and tender lump was felt on its outer side, and the axillary glands were enlarged and tender. On June 15 the right breast was also tender. Lead and opium compresses were applied and the breasts seemed to improve, but the temperature, which began to rise on the 15th, showed wide daily oscillations of the septic type between 99° and 102° , and not the "staircase" character of a typhoid relapse. On the 20th the swelling and tenderness of the left breast had become much more marked and involved the two upper and the outer lower quadrants. The skin was freely movable and the nipple was not bound down. On the 24th the temperature reached 104° and

fluctuation was detected. Under chloroform 150 c.c. of thick pus containing the typhoid bacillus in pure culture were removed by incision. The abscess cavity consisted of many loculi which were broken up with the finger. The temperature at once fell to normal and healing was uninterrupted. The swelling in the right breast diminished, but when the patient left the hospital there was still slight induration in the upper outer quadrant. There had been no previous disease or injury to the breasts.

In 1874 Leudet recorded 5 cases in which one or both breasts became tender and swollen in typhoid fever and showed inflammatory masses (*Clinique Médicale de l'Hôtel Dieu de Rouen*, 1874, pp. 96-99 and 113-118). In all resolution occurred. Curschmann states that transitory swelling of the breasts at the height of fever is not uncommon and may be overlooked if the patient does not complain (*Der Unterleibstypus*, Vienna, 1898, p. 184). The writers could find records of only 4 cases of suppurative mastitis in typhoid fever. In one described by Charlotte P. West there was a general pyæmic condition (*Philadelphia Polyclinic*, 1898, vol. vii., pp. 253-256). At the beginning of the third week both breasts became swollen and tender, possibly from hypodermic injection of saline solution. At the beginning of the fourth week localised dusky red swollen elevations were discovered in both legs, both arms, and both breasts. Those in the right leg, the left arm, and both breasts suppurated and healed after incision. Recovery followed. In 1891 Destrée reported 2 cases of typhoid fever in which an abscess developed in the right breast at the end of the third week, but the pus showed only staphylococci. The fourth case is reported by Capellari and is almost exactly parallel to the one described above (*Corriere Sanitario*, Milano, 1900, vol. vi, p. 88). A girl, aged 15, had pain and swelling in the right breast in the fourth week. The temperature, which had become normal, assumed a septic type. The abscess was opened and recovery followed. No bacteriological examination was made. Capellari lays

stress upon the age of the patient, believing that at puberty the rapid development of the mammary glands predisposes to inflammation.

Arthritis in Varicella.—Henri Lacasse (*Gaz. Heb. de Méd. et de Chirug.* March, p. 253).—A boy, aged 2, was brought to hospital with a swollen knee. The right knee was hot, globular, semi-flexed, and distended with fluid; the skin was tense and shining, the tension was so high that no fluid wave could be felt on percussion. Movement or pressure were painful, the limb could be flexed almost completely, but full extension was impossible. The right inguinal glands were enlarged, but only slightly tender. The child had just recovered from chicken-pox accompanied by suppuration. Some macules covered with crusts in the centre of which was slight umbilication were still present. The general condition was good. The temperature was 102° in the morning, 101.5° in the evening.

Exploratory puncture of the joint revealed some fluid of doubtful appearance. Next day arthrotomy was performed, by bilateral incisions on each side of the patella and greenish sero-purulent fluid escaped. A finger introduced under the patella brought out a fibrinous blood-clot of the size of a walnut. The joint was drained. The fluid removed contained streptococci. For 2 months the general condition was bad. Healing took place with almost perfect movement of the joint.

Analogous cases are rare. Semtschenko, writing in 1886 and recording various epidemics of chicken-pox, mentions the case of a little girl who had arthritis during varicella. Bokai reported at Budapest in 1888 the case of a girl aged 7, who developed acute multiple serous synovitis. The joints were successively attacked, and with each attack the temperature rose. Perret in 1889 related the case of a girl, aged 6, who had chicken-pox from Jan. 21st to the 30th, and was completely cured on Feb. 4th. On Feb. 10th the child injured the left leg. Next day the hip,

knee, and dorsum of the left foot became painful, then the right knee and dorsum of the right foot. The temperature was 102°. There was a swelling in the right groin and albuminuria. She completely recovered except for a little stiffness of the left hip joint.

Chofragny and Landon described arthritis during varicella. The latter saw a case of arthritis of the right elbow which ended in recovery. Charrin reports a case in which 15 days after the appearance of chicken-pox the patient had severe pain in both shoulders. In 1894 Braquehay observed a case of general streptococcic infection in a child, aged 3, under treatment for Pott's disease and abscess in Scarpa's triangle. Nine days after the appearance of chicken-pox the right knee began to swell and the temperature rose. Arthrotomy was performed and the pus withdrawn from the knee contained streptococci. The child died. At the necropsy pus was found not only in the right knee, but also in the right elbow, and sterno-clavicular joints. There was tricuspid and mitral endocarditis. Streptococci were found in the clots in the heart.

Brunner in 1896 reported a case of varicella with suppuration, in the course of which a general staphylococcic infection occurred. A girl, on the 5th day of the disease, developed arthritis of the elbow with albuminuria. Arthrotomy was performed, but no improvement in the general symptoms took place. There were two fresh crops of pustules, the first being accompanied by double parotitis, the second by multiple abscesses of the skin and otitis media. She died on the sixteenth day. The pus in the abscesses, the blood, the urine, and the serum, contained staphylococci, as did also the blood in the liver and in the iliac vein.

Carrel-Billiaut in 1897 reported a case in which a certain number of vesicles had suppurated and then the temperature became normal. Eleven days afterwards the temperature rose. In 6 days, the right shoulder, tibio-tarsal, left metatarsophalangeal and inter-phalangeal joints were attacked. They enlarged, and became red, hot,

and painful. Then the pain diminished and settled in the left shoulder, which filled with fluid. Complete recovery occurred in 15 days.

Désandre in 1901 stated that the staphylococcus was chiefly responsible for secondary suppuration in the course of chicken-pox. Arthritis though not very frequent, ought to have a prominent place among secondary manifestations of suppurative chicken-pox; it appears after the eruption terminates. It is evidence of a general infection through the blood, or of a local infection through the lymphatics. The cause is the staphylococcus or the streptococcus. The prognosis should be guarded in view of the possibility of general purulent infection.

Hypostatic Albuminuria of Splenic Origin.—H. D. Rolleston, M.D., F.R.C.P. (*Lancet*, March 1, p. 585).—In some patients with considerable splenic enlargement rest in the recumbent position may be accompanied by albuminuria, and the albumin may disappear from the urine when the patient assumes the erect position. This fact was first brought to the writer's notice in a case of advanced leukæmia. Falkenheim explained the albuminuria by pressure of the spleen in the recumbent position on the left renal vein (*Deutsches Archiv für Klin. Med.*, Band xxxv., S. 446, 1884), and described this condition in a man, aged 50, with hepatic cirrhosis and a large spleen. Lying on the right side and on the abdomen did not induce albuminuria. Dr. Rolleston has recently had under care 2 other patients, with hepatic cirrhosis and splenic anæmia respectively. They had considerable splenic enlargement and a large quantity of albumin in the urine while lying in bed. The albuminuria disappeared after they had been up for several hours. The albuminous urine was often high coloured, and, like the urine of backward pressure in cardiac disease, lithatic. In all 3 cases the night urine was sometimes found free from albumin.

the existence of this hypostatic albuminuria, the term may be used, should be borne in mind in cases in which, as in hospitals, the sample of urine provided for examination is taken from the whole amount passed in the 24 hours or is that voided early in the morning while the patient is lying down. It is far from constant in cases of splenic engorgement. In this it resembles albuminuria in chronic venous engorgement induced in other ways, as, for example, in the backward pressure of mitral disease. It does not depend on the size of the spleen, for hypostatic albuminuria may be, and, indeed, usually is, absent when the spleen is very large, and may be present, as in some of the writer's 3 cases, when the spleen is relatively smaller. This hypostatic albuminuria is the reverse of the usual form of cyclical albuminuria in which albumin appears when the patient is lying down and disappears when he is

up. The lower border of the stomach was found to extend within 2 in. of the pubes, while its right extremity reached the anterior axillary line. The pylorus was fixed posteriorly, but no abdominal tumour or localized tenderness could be detected. The urine was normal. A soft tube was passed in the early morning and the stomach was found to contain about 11 oz. of semi-digested food, which had a sour smell, and gave the reaction of free hydrochloric acid. An hour after the administration of a test breakfast 15 oz. were extracted, and when filtered yielded an opalescent acid fluid, which contained a slight excess of free hydrochloric acid, but no lactic acid. The history and physical signs seemed to warrant a diagnosis of contraction of the first part of the duodenum from the cicatrization of a simple ulcer. Lavage with warm water night and morning, and semi-solid nutritious and digestible diet were ordered. Next day he said he was much better, but at 2 o'clock on the following afternoon there were violent retching and vomiting, which continued until 7 p.m., when tetany supervened. It was rather more pronounced on the left than on the right side. The forearms were flexed, pronated, and adducted, the wrists bent, and the thumbs pressed into the palms with the fingers closed over them. The lower limbs were rigidly extended, the heels drawn upwards, and the soles of the feet turned inwards. There was slight trismus. The tetany continued for 6 hours, and was accompanied by quick superficial respiration and feeble pulse. The immediate cause of death was cardiac failure.

Tetany of Gastric Origin: Death in the first Attack.—Dr. Soltau Fenwick (*Brit. Med. Jour.*, March 8, p. 587).—A man, aged 64, was admitted to hospital. He stated that his digestion had been weak for 14 years, and that during the last 3 the symptoms had been unusually troublesome and that there had been vomiting. He had lost over 4 stones weight. Pain after meals was an instantaneous phenomenon, but there was always distension and discomfort with occasional gurgitations of an acid fluid. Vomiting was especially troublesome at night, when the ejecta often amounted to 2 or 3 pints.

He was very emaciated, but not cachectic. His tongue was flabby and moist, the pulse of low tension, and the temperature subnormal. With the exception of some slight emphysema, the lungs were apparently healthy. The abdomen was flattened above the navel, but below that point it presented a large swelling, the surface of which peristaltic movements were visible. On auscultatory per-

NECROPSY.—The stomach was considerably dilated and hypertrophied. About 2 inches from the pylorus, upon the posterior wall and close to the lesser curvature was a circular, chronic ulcer, about the size of a florin. The base of the ulcer was adherent to the upper margin of the pancreas, and the dense adhesions which had formed around it had dragged the second portion of the duodenum upwards and inwards, causing

considerable obstruction of its lumen through kinking and compression of its walls. The pyloric orifice was dilated to the size of a half-crown, and the first 2 inches of the bowel were greatly dilated. The other viscera were normal.

The cause of the duodenal stricture was an unusual one, since the ulcer occupied the pyloric region of the stomach, and only affected the duodenum through the medium of adhesions. Death during the first attack of tetany is very rare; in most of the recorded cases the patient had several seizures before the fatal one. Trismus is always a bad sign, the onset of the tetany soon after the passage of a tube into the stomach is important, this has been observed in other cases. Probably the poison which causes the nervous symptoms is frequently present in the stomach of persons who have pyloric or duodenal obstruction from simple ulceration but its absorption is prevented by the integrity of the columnar epithelium. When however this is injured or partly removed by the use of a tube or by severe vomiting the poison enters the circulation and acts on the central nervous system.

Pancreatitis from Duodenal Ulcer: Death from Sepsis.—M. Leonhardt (*Virchow's Archiv*, Bd., 162, Hft. 2, p. 301).—A man who had had syphilis, but was otherwise in good health, was suddenly seized with pain in the right side of the abdomen, vomiting, headache, and a slight rigor. The colicky epigastric pain and the rapid appearance of jaundice pointed to cholelithiasis. Soon, however, a tender, painful swelling was felt in the abdomen. It did not move with respiration, and though to the right of the umbilicus, was to the left of the normal position of the gall-bladder. A tumour of the duodenum or pancreas involving the ampulla of Vater was therefore suspected. The latter alternative was rendered probable by the appearance of glycosuria and fatty stools. There were vomiting of a tar-like liquid containing ragged masses,

diarrhoea with copious bloody stools, increasing mental dulness, pyrexia, and asthenia, which together pointed to a general infection from inflammatory breaking down of the tumour. Death occurred a fortnight after the onset of acute symptoms.

NECROPSY.—There was an ulcer on the inner surface of the duodenum, which had penetrated the head of the pancreas, and communicated there with a small gangrenous patch. There were extensive hæmorrhages and numerous necrotic patches in the pancreas and in the abnormally fatty retro-peritoneal cellular tissue of the pancreas and duodenum. The normal pancreatic tissue was replaced almost entirely by fat, and the scanty remnants of parenchyma were necrotic or showed traces of past inflammation. In cultures and sections staphylococci, and two kinds of bacilli, were found; in the sections streptococci were also present. Of these the staphylococci alone were pathogenic to mice.

The abnormal retro-peritoneal adipose deposit, and the disappearance of the pancreatic tissue were probably old changes. That no disturbance of digestion occurred until the final acute illness is in accordance with what has been observed in other cases of pancreatic disease. But on the destruction of the last vestige of functionally active pancreatic tissue by an infective process spreading from the duodenal ulcer the disease proved fatal. The swelling and the jaundice were caused by secondary inflammatory enlargement of the head of the pancreas, which compressed the biliary passages—conditions exactly opposite to those assumed to exist before death, namely, a primary tumour of the head of the pancreas with secondary ulceration of the duodenum. The intense pain was due to the pancreatitis and secondary peritoneal irritation. The spleen, as is often the case in pancreatitis, was not enlarged. The immediate cause of death was septicæmia. The inflammation, necrosis of the retro-peritoneal fat, and the hæmorrhages were due to the staphylococcus, and

not to escape of pancreatic secretion, though the necrosis of fatty tissue occasionally observed in other cases may have had this origin. The experiments however in which the implantation of pancreatic tissue on the peritoneum of animals or the application of trypsin has been followed by necrosis require repetition, before it can be regarded as certain that the necrosis was due to the pancreatic secretion rather than to accidental infection of the wound.

Bullous Eruption after Vaccination.—

L. Reinhardt (*Corr.-Bl. f. Schweiz. Aerzte*, Feb. 1, p. 78) on Dec. 15, vaccinated his little daughter on both upper arms with the usual aseptic precautions. The resulting vesicles were surrounded by a highly inflamed areola, and there was moderate pyrexia. The temperature became normal, but on the ninth day rose again to 103.6° and remained raised by 3° to 5° for 10 days. Simultaneously the right cheek, and then the whole face, except the forehead, became red and swollen. On the forehead confluent bullæ of the size of half an apple appeared on the tenth day after vaccination. Some of these burst; the remainder were incised, and gave exit to a more or less purulent fluid, which rapidly decomposed and became offensive. The secretion gradually dried up and formed scabs. On the second day of the eruption the mucous membranes of the mouth, pharynx, and nose were similarly affected and secreted a large quantity of foetid pus. Certain symptoms pointed also to involvement of the mucous membranes of the bronchi and gastro-intestinal tract. There were smaller bullæ on the genitals and around the anus. For a fortnight the child could be fed only with great difficulty, as deglutition was painful and there were excoriations, which readily bled, at the angles of the mouth. The resulting sores were becoming covered with epithelium under a zinc ointment dressing, when one month after the first attack, there were renewed but more moderate pyrexia and an eruption of vesicles of

the size of a pea over the whole body. The pyrexia lasted 3 days and the scabs fell in from 2 to 3 weeks. Four weeks after the second attack there was a third, in which there was no pyrexia and the vesicles were smaller. The vesicles in the second and third attacks affected the parts spared previously. The third attack was soon over. Nephritis then appeared and lasted 6 weeks; the urine had previously been healthy. Thus the child was ill for more than 3 months. Except that some of the lymphatic glands, which were greatly enlarged during the illness, had not quite subsided, recovery was complete.

The bullæ contained a species of streptococcus, which appeared to be closely allied to the pneumococcus and was pathogenic to mice. Since all the lymph in the capillary tube employed had been used it could not be determined whether the same organisms were present in it, but other tubes filled from the same calf were sterile. Nevertheless, the writer is convinced that the eruption was due to the vaccination. Four other patients were vaccinated from the same tube as the child. One, a man, aged 28, had greatly inflamed vaccine vesicles with high pyrexia, and was incapacitated from work for 3 weeks. The other 3 were children; all suffered from high pyrexia, and one from purpura hæmorrhagica. The nature of the bullous eruption is obscure, but the writer concludes that it was a symptom of the rare disease known as acute pemphigus or *febris bullosa*, which was so far atypical that the eruption appeared at long intervals with intervening apyrexial periods, instead of at short intervals during continued fever, and did not affect the trunk till the second attack, though this is the region usually most affected.

The case was reported to the Basle Medical Society and several members doubted whether the appearance of the eruption after vaccination was more than a coincidence. The fact that it did not appear before the ninth day was against the virus having been inoculated with the

lymph, and the rarity of eruptions compared with the frequency of vaccination made a connection between the two improbable.

Tuberculous Pericarditis, with Effusion: Recovery after Repeated Tappings.

—Florence R. Sabin, M.D. *American Medicine*, March 8, p. 388).—A coloured boy, aged 20, entered Dr. Osler's clinic at the Johns Hopkins Hospital, on March 31, 1901, complaining of pain over the heart. His illness began 2 months before with sharp and stabbing pains in the right chest, worse on taking a deep breath. He had cough, shortness of breath, and frequent night sweats. Three weeks before admission he began to have pain over the heart, which was so severe that he gave up work.

He appeared well nourished. The signs in the lungs were practically normal, except over the lower right side, where there were impaired percussion note and enfeebled breath sounds. Over the heart was heard a loud to-and-fro pericardial rub. It was superficial, rough and altered by pressure. The heart sounds were heard with difficulty, but a point of maximum impulse was clearly seen. The cardiac dulness was of normal extent. The pulse was regular and of good volume; the arteries were somewhat sclerosed. The blood showed hæmoglobin 85%, and red corpuscles 4,600,000 per c.mm. The sputum was scanty and muco-purulent. No tubercle bacilli were found in it, though they were repeatedly sought. The urine contained albumin and casts.

Gradually signs of pericardial effusion developed. The first change noted was in the pulse. Up to April 8 the average rate was 114. Between April 8 and 25 it was 120. The temperature changed at the same time. Before April 8 it ranged between 100° and 102°; after, it became irregular and occasionally intermittent, ranging between 97° and 104.7°. The area of cardiac dulness began to increase. By April 15,

there was movable dulness in Rotch's space. On April 19 the pulsus paradoxus was present. On auscultation both the friction rub and heart sounds became more and more feeble, especially at the apex. The most noticeable change in symptoms was in the cough, which occurred in severe paroxysms, ringing and high pitched. There was some increase in the dyspnoea. By April 24, the cardiac dulness extended 14 cm., instead of 7 cm., to the left of the middle line in the fourth interspace, and 3 cm., instead of 1.5 cm., to the right.

On April 25 Dr. Osler noted 3 signs indicating considerable effusion. First, the impulse was no longer visible; second, there was distinct bulging of the precordium; and third, there were signs of compression of the left lung, namely, flat tympany in the left axilla though not at the back. A needle was introduced in the fifth interspace 1.5 cm. outside the mammillary line. About 10 c.c. of slightly yellow fluid were removed. No organisms were found in it. On April 27 the pericardium was again aspirated and 25 c.c. were removed. The fluid contained a few red and white blood-corpuscles, but no organisms. After the aspiration the patient was better. The cardiac dulness now extended 13.5 cm. to the left and 1.5 cm. to the right. There was no dulness in Rotch's space. By May 1 the apex beat was again visible, and by May 4 the heart sounds were heard, but there was embryocardia. The patient now began to complain of epigastric pain. The cough continued severe and the temperature was more elevated. On May 11 the needle was inserted twice—in the fifth interspace and in the sixth. Both times the heart was touched. Fifty c.c. of fluid were removed. It was centrifugalised, and in the pus a clump of 8 or 10 tubercle bacilli was found.

For a few days he was more comfortable, but on May 14 he complained of pain in the right submammary region, where loud plural friction was heard. Probably the previous abdominal pain was due to diaphragmatic pleurisy. By June 7 the signs of pericardial effusion had

considerably diminished. The apex was well seen 10 cm. from the middle line, the heart sounds were loud, and there was gallop rhythm instead of embryocardia. No pericardial friction rub was heard. However, signs of pleural effusion on the right side began to appear—increasing dulness, definitely movable, absent vocal fremitus and suppressed breath sounds. On June 8 the right pleural cavity was tapped, and more than a litre of fluid was removed. The chest filled repeatedly, and was tapped in all 14 times. About 20 litres of fluid were removed. The fluid was always blood-stained and sterile. No tubercle bacilli were ever found—probably because centrifugalising caused the fluid to clot, thus making the difficulty of the search great. At the fifth tapping the leucocytes in the exudation consisted of 98·5 % small, and 1·3 % large mononuclear forms, while only 2 % were polynuclear.

The intervals between the tapplings became progressively longer and there was dyspnoea only when the fluid was considerable. Tapping was performed last on Sept. 7, and the fluid did not collect again. On Jan. 19, 1902, there were no signs of pleural or pericardial effusion. The point of maximum cardiac impulse was within the nipple line, the sounds were well heard and clear. The right shoulder drooped; the left side of the chest was fuller and expanded more. Over the right lung the note was resonant above, impaired below. The vocal fremitus was diminished and the breath sounds feeble over this impaired area. The general condition was good. There was still marked cough with scanty expectoration.

Thus extensive tuberculosis of the serous membranes became quiescent, the only physical signs being those of thickened pleura and partially collapsed lung. The points of interest are (1) the great value of repeated tapplings in serous effusions; (2) the finding of tubercle bacilli in the pericardial exudation; and (3) the high percentage of mononuclear forms in a tuberculous exudation.

The Differential Diagnosis of Scarlet Fever and other Erythemata occurring during Diphtheria.—Dr. Lobligois (*Gaz. Heb. de Méd. et de Chirug*, Feb. 27, p. 181).—Borsieri first noticed rashes resembling the scarlatina eruption during diphtheria, and, after a period of silence, they were again mentioned by See in 1858. He regarded them as cutaneous manifestations of the diphtheritic poison, and said that they appear on the seventh day, that the duration of the rash is short, a day or two at most, and that it is accompanied by a slight rise of temperature lasting only one day. The rash appears on the wrists, elbows, knees, ankles, and buttocks; it is rarely primary, but is usually preceded by a polymorphic eruption. It rapidly invades the upper and lower limbs, then the chest, but it hardly ever affects the face; at this time the rapid extension, the scarlet colour, the roughened state of the skin, and the disappearance of the rash on pressure, constitute a condition liable to be mistaken for scarlet fever. It is, however, not followed by desquamation, and may be followed by true scarlet fever. Mussy (*Thèse de Paris*) writing in 1888 and Hutinel (*Archives Gén. de Méd.*, Oct., 1892) called attention to the occurrence during diphtheria of delayed rashes resembling scarlet fever, accompanied by profound depression of strength, an earthy colour of the face, sunken eyes, and pinched nose and a fatal result.

Poix writing in 1896 stated that these rashes were more frequent since the introduction of anti-diphtheritic serum (*Thèse de Paris*). They usually appear between the fifth and thirteenth day, the scarlatiniform variety being usually somewhat delayed. They may appear at two different periods in the same patient. They may begin at the puncture made in injecting antitoxin, at some other part, usually the buttocks or thorax. These eruptions form extensive red speckled sheets on the back, the flexor aspects of the upper and lower limbs, and spread to the thorax; they hardly ever appear on the face. This form is often mingled with a rash resem-

bling German measles, and both forms are often preceded by urticaria. Irritation is an almost constant characteristic. The duration is short, and there are usually digestive disturbance and pain in the joints.

Rashes may also be caused by secondary infections, especially those due to streptococci or, according to some writers, to the Klebs-Löffler bacillus. Such eruptions may be mistaken for those due to antitoxin. The latter are due to the serum of the horse and not to the antitoxin contained in it. Urticaria and scarlatiniform eruptions are most frequently produced by antitoxin. In 1310 cases treated by Lobligois rashes appeared in 93, and 39 of these were scarlatiniform; in 15 cases the nature of the eruption was not indicated. There appears to be no relation between the age of the patient, the form of diphtheria, the gravity of the case, and the frequency and severity of the eruption. Further, there is no relation between the number of units of antitoxin injected, and the frequency of eruptions caused by it. The individual predisposition of the patient seems an important factor. The fact that epidemics of eruptions take place and are followed by periods when few are seen seems to be due to the difference in the toxic properties of the serum of the immunised horses. Further, fresh serum produces more eruptions than matured.

Scarlet fever following these early rashes pursues its normal course, but the phenomena of invasion may be less marked. The temperature rises 2 or 3 days before the appearance of the rash, which is usually coincident with the highest degree of temperature. It is generally an exceedingly benign form of the disease, and recovery takes place without complications. Differential diagnosis from the appearance of the rash is not possible. The typical scarlet fever tongue is absent in scarlatiniform rashes, and desquamation is slight and takes place earlier than in scarlet fever. Examination of the blood gives some assistance. In scarlatiniform eruptions eosinophiles and

abnormal elements are present, but the polynuclear condition is slight. In scarlet fever there are no abnormal elements, and a marked polynuclear condition is present. Ehrlich's diazo reaction is strongly recommended. It is performed as follows:—Add 3 drops of the following solution: nitrate of soda 1 gm., water 200 gm., to 5 c.c. of the following: sulphanilic acid 5 gm., hydrochloric acid 50 gm., water 1 litre. Mix with an equal quantity of urine, and add ammonia drop by drop. If a cherry red colour is obtained the reaction is positive, if vermilion red it is doubtful. Shake the liquid: in doubtful cases the froth is yellow, in positive cases it is pink. If the diazo reaction is sought for in scarlet fever during the period of eruption, and even during its incidence it can almost always be obtained. Lobligois found it positive in 42 out of 52 cases. In diphtheria it is extremely rare, and he only found it in 3 out of 137 cases. It is absent in scarlatiniform rashes due to serum, but present in those due to streptococci. The diazo reaction seems to have considerable diagnostic value: if the result is positive the diagnosis of a rash due to serum may almost certainly be rejected, and that of scarlet fever given. But a late eruption in diphtheria may be due to streptococcal infection and not to antitoxin serum, and it will give the reaction. If the diazo reaction is negative a serum rash is probably present but the diagnosis of scarlet fever cannot be absolutely rejected, as in it the reaction sometimes fails.

Intestinal Sand.—W. B. Ranson, M.A., M.D., F.R.C.P. (*Quarterly Med. Jour.*, Feb., p. 144).—The passage of sandy matter other than biliary gravel from the bowel is an extremely rare occurrence, and is hardly noticed in the text-books. Attention appears to have been first drawn to it by Laboulbène (*Bull. de l'Acad. de Méd.*, 1873). Delépine (*Path. Soc. Trans.*, 1891), and Shattock (*ibid.*, 1897) have also described cases. In these the matter closely

resembled ordinary sand or uric acid gravel, and consisted wholly or partly of thick-walled vegetable cells of the kind known as "sclerenchyma." On the other hand, Thomson and Ferguson published an analysis of sand passed during several months by a lady suffering from nervous dyspepsia and constipation, which consisted of phosphate and carbonate of lime, with a trace of silica (*Jour. of Pathol.*, Feb., 1900). In Feb., 1901, Sir Dyce Duckworth and Dr. Archibald Garrod described a case of enteric lithiasis, in which the sand consisted mainly of calcium phosphate (*Royal Med. and Chirurg Soc.*). The patient was a lady who for years had suffered from diarrhoea, flatulence, and loss of flesh and strength, and passed sand during that period. She improved on a meat diet. According to other speakers at the discussion, attacks of colic and diarrhoea are the most frequent symptoms of the malady. The writer records the following case:—

A Natal farmer, aged 49, had suffered for a year from attacks of severe epigastric pain and rigors followed by jaundice. The symptoms were practically those of gall-stones. It was said that a small stone had once been found, but during the whole time he had passed a great deal of "sand" with the stools. The sand was more abundant after an attack of the epigastric pain, but he also complained of bowel pain "from the sand." He came to England and went to a hydropathic establishment, but derived no benefit. He was slightly jaundiced and decidedly wasted. There was some resistance and tenderness over the left lobe of the liver, with slight dilatation of the stomach, the appetite was poor, the bowels were rather constipated, and the faeces were said to be only slightly pale.

He brought about a teaspoonful of sand which he had washed from the stools the day before. It was a gritty substance, of a buff colour, and from its appearance, might well be, urinary gravel. Under a low power of the microscope the same impression was obtained, for it was seen to consist of yellowish-brown spherules studded

with projecting spikes, like minute uric acid calculi. Here and there a crystal of tribasic phosphate of lime was seen on the spherules. On chemical examination it was found, however, that the sand was insoluble in acids or alkalies, did not give murexide reaction, and charred on heating. After softening the grains by soaking in potash and crushing under the cover-glass, the seeming crystals were found to be really vegetable sclerenchyma cells which, packed together in rounded masses, formed the grains of "sand." The cells were polygonal or irregularly oval in shape, had extremely thick walls with radiating lines and a very narrow cell cavity. Isolated, they were nearly colourless and stained yellow with iodine, but when massed together they presented the yellow-brown tint of uric crystals, the colour probably being due to sterco-bilin or some allied pigment. The pulp of a pear shows almost exactly similar sclerenchyma cells.

Unfortunately, the patient was seen only once and not questioned in detail about his food. It is extraordinary that he should have passed these sclerenchyma cells for 12 months. He could hardly have eaten pears the whole time. Professor Marshall Ward thought the cells probably those of a pear, and Shattock and Delépine traced the "sand" in their cases to pears. It is to be remembered that food particles may remain a long time in the bowels in spite of regular evacuations. The writer once found mushrooms in the stools 3 weeks after they had been eaten. Possibly the pain and jaundice in the present case were caused by intestinal sand blocking the orifice of the bile-duct. The possibility of these grains of sclerenchyma forming a nucleus of a concretion in the vermiform appendix is obvious, and their abundance in pears suggests caution in the use of that fruit. According to Mr. Shattock no similar cell-groups occur in any other common edible fruit.

See also "REVIEW," p. 146.

The Symptomatology of Syphilitic Spasmodic Paraplegia.—Dr. Pierre Marie (*Bulletins de la Société Médicale des Hôpitaux*, Feb. 14, p. 115).—The symptoms of syphilitic spasmodic paraplegia are characteristic. Despite the numerous works on the affection, particularly that of Erb, this fact has not been sufficiently brought into prominence. Though the gait is spastic, it is not only spasm which prevents the patients from walking, but also paralysis of the flexors of the lower limbs. This paralysis is remarkably localised: the power of the psoas iliacus muscles is always diminished; flexion of the thigh is performed with difficulty, or at least with much less force than normal. Similarly, there is feebleness of flexion of the knee and of dorsal flexion of the foot, but this is generally much less than that of the psoas muscle. There is a curious difficulty of adduction of the thighs: if the patient is told to press the knees together they can, almost without effort, usually be separated by the hand to a distance of 7 or 8 cm., but no farther in consequence of muscular resistance. Thus adduction is enfeebled only when the knees are close together. The writer thinks that this phenomenon is due to paralysis of the pectineus muscle. The sphincter troubles are also peculiar. There is not incontinence in the ordinary sense, but an imperious desire to micturate and to defæcate which must be satisfied at once. Sensory affections are rare. Genital troubles, on the contrary, are common; both sexual desire and power are affected and the cremasteric reflex is often abolished. All the symptoms are not necessarily paraplegic. There may be paræsthesia or weakness of the muscles of the upper limbs, more often of one upper limb. Frequently there is increased susceptibility to emotion—a spasmodic tendency to laugh or to cry; more rarely there is slight loss of memory. The symptoms on which stress has been laid are so constant that they constitute a well-marked type. The morbid anatomy cannot be stated.

Widal's Reaction in Other Diseases than Typhoid Fever.—(Clinical Society, *Lancet*, March 22, p. 817).—Dr. W. Hale White and Mr. C. C. Pakes described a typical case of malignant endocarditis in which the patient died from cerebral embolism. The blood on June 10th failed to agglutinate typhoid bacilli even in a strength of 1 in 2. On the 20th agglutination was produced with a strength of 1 in 2 and 1 in 20, but not with a strength of 1 in 200. Pure cultures of streptococcus longus were obtained from the blood. On the 29th cultures from the urine collected with every precaution showed the presence of a streptococcus identical with that previously obtained from the blood and a bacillus of the paracolon group. Every attempt to isolate the typhoid bacillus failed. The agglutination test was tried with 5 different strains of bacilli, and with four complete agglutination was obtained with a dilution of 1 in 20, and with one partial agglutination was obtained with a dilution of 1 in 200. On Sept. 13th the patient died. Blood taken from the heart and the spleen showed the streptococcus longus in pure culture, but no typhoid bacilli. The patient had no spots or other signs of typhoid fever, nor were signs of healed ulcers found post mortem.

In this case the blood of a patient suffering from malignant streptococcal endocarditis contained certain substances which had the power of agglutinating the typhoid bacilli. This result is of clinical importance in considering the diagnosis between typhoid fever and malignant endocarditis. Many observers have failed to obtain a Widal reaction in malignant endocarditis. In this case the presence of the reaction could not be due to the patient having had typhoid fever previously, for no reaction was obtained on admission. She was treated with various strains of anti-streptococcal serum, but without good result.

Dr. F. S. Toogood referred to the case of a man who inoculated his thumb with septic matter on Feb. 10. Glandular enlargement and

constitutional symptoms with a temperature of 104° followed. On March 4th, there was epistaxis, and the blood gave Vidal's reaction, but next day the right shoulder-joint and surrounding tissues were cedematous and other joints became involved. On the 10th the blood again gave Vidal's reaction, with dilutions 1 in 10, 1 in 25, and 1 in 50, but there were the clinical features of septicæmia.

Dr. J. W. Carr referred to the case of a child, aged 5, with symptoms and signs typical of acute tuberculosis mainly of the lungs, yet the blood tested at the Jenner Institute gave a marked Vidal reaction.

Dr. C. R. Box said that it was most important to indicate what dilution was used. At first with low dilution he had got reactions with diseases other than enteric fever. He thought 1 in 50 was the most suitable dilution for obtaining the true test in cases of typhoid fever.

Dr. W. Lee Dickinson referred to a case of gastric ulcer which was erroneously diagnosed during life as typhoid fever on the strength of the agglutinative reaction.

Intestinal Obstruction from Gall Stones.

—Karewski (*Centralbl. f. Inn. Med.*, Dec. 14, 1901, p. 1222).—Impaction of a gall-stone may occur at any point of the intestinal tract. It occurs most commonly in the small intestine at or near the ileo-cæcal valve. The occurrence of obstruction depends not only on the size of the stone, but also on inflammatory changes in the intestinal wall, folds in the mucosa, or consecutive intussusception. Thus the stone may be present in the intestine for some time before symptoms of ileus appear. The treatment is unsettled. Some advocate prolonged expectant treatment, others immediate operation. The writer believes that surgical intervention should be postponed until expectant and symptomatic treatment have failed to relieve, since there is always a chance of spontaneous recovery. The following cases

illustrate most of the types of obstruction due to gall-stones :

CASE 1.—A man, aged 56, had several attacks of biliary colic, in the last there was fæcal vomiting. Copious enemata brought away a stool. Five weeks later all the symptoms recurred and were again removed by gastric and intestinal irrigation. Pain, however, persisted until 6 months later, when a large gall-stone was passed.

CASE 2.—A woman, aged 73, who in youth had suffered from "cramps in the stomach," was suddenly seized with violent pains in the gastric region and vomiting. The vomited matter rapidly became fæculent, and there was complete intestinal obstruction. Under enemata she improved, but pain persisted in the lower abdomen. Pyrexia and a palpable swelling appeared. This was incised and yielded pus mixed with gas and a large gall-stone. Convalescence was prolonged by a colic fistula, which eventually closed.

CASE 3.—A woman, aged 37, had symptoms of chronic intestinal obstruction for several years with occasional acute exacerbations. The diagnosis lay between chronic cholelithiasis and the results of perforation of a gastric ulcer. Laparotomy was performed. Between the matted coils of intestines was an abscess containing 2 gall-stones.

CASE 4.—A woman, aged 60, had suffered for 22 years from pain in the left side of the abdomen occasionally accompanied by bilious vomiting. There had never been colic. The attacks of vomiting became more and more frequent and finally were accompanied by intense pain and fæcal vomiting. Fæces and flatus were still passed. Temporary improvement followed gastric and intestinal irrigation. Laparotomy was performed, and an impacted gall-stone was removed from a coil of small intestine. Fæcal vomiting persisted for 36 hours after the operation, but convalescence was thereafter uninterrupted.

CASE 5.—After frequent attacks of colic complete intestinal obstruction occurred and proved

fatal. Post mortem a gall-stone was found impacted in the ileum.

Meralgia Paræsthetica.—Dr. Edwin Bramwell (*Lancet*, March 15, p. 478).—A miner, aged 43, had suffered for 18 months from pain over the right hip and lower part of the right thigh anteriorly, and from a feeling of coldness on the outer side of the right thigh. The pain was greatly increased by walking and was so severe that it incapacitated him from work. In other respects he enjoyed excellent health. He had not had rheumatism or syphilis. The condition was attributed to sleeping on hard boards in damp clothes. An area of relative cutaneous hyperæsthesia was found on the outer side of the right thigh, while there was marked tenderness over a point $1\frac{1}{2}$ in. below and just external to the right anterior superior iliac spine. The symptoms were obviously referable to the right external cutaneous nerve. Since no improvement resulted from rest in bed and faradism the nerve was cut down upon at the level of Poupart's ligament, and 3 in. excised. The nerve and its relations appeared to be normal. The pain which had previously been present, even when the patient lay in bed, disappeared. No degenerated fibres were found in the excised nerve.

Dr. Bramwell considers meralgia paræsthetica a distinct clinical entity, which probably is not uncommon. Roth has recorded 15 personal observations. The condition is well worthy of notice for purposes of exclusion in differential diagnosis in cases in which the pain is so severe as to unfit the patient for work. The pathology is obscure. Perhaps in some cases there is merely a neuralgia, in others a neuritis. Faradism appears to have been efficacious in the treatment

of several of the reported cases. Resection of the nerve is only justifiable in severe and persistent cases.

The Effect of Alternating Currents of High E.M.F. on Animals under Chloroform.—S. Jellinck (*Wien. Klin. Woch.*, Nov. 7, p. 1099) describes a paradoxical effect produced by high tension alternating currents on chloroformed rabbits. Under normal conditions with the poles in the mouth and rectum, respectively, the application causes either instant death or more or less permanent damage. The animal may, for instance, be paralysed in the posterior, or in all four limbs for hours, be seized with nodding spasm, or lose appetite and rapidly die. But under chloroform anæsthesia so deep that a needle inserted into the spinal cord produces no reflex or other sign of feeling, a powerful alternating current produces violent opisthotonos; the animal attempts immediately to spring to its feet, but falls or rolls round its long axis, and widely opens its mouth and screams. In a few minutes it is able to walk on all fours, and though terrified and cowed by the slightest touch soon recovers completely. A control animal, anæsthetised equally deeply, breathes shallowly and irregularly, and either dies or remains insensible for 10 or 15 minutes after the electrified animal has recovered.

Thus the current which kills or injures an ordinary animal is an excellent restorative to one deeply anæsthetised. Animals so revived had no unpleasant sequelæ either from the chloroform or the electricity. It is remarkable that these high tension alternating currents act when all other known stimuli are powerless to affect the centres in the brain or spinal cord.

THERAPEUTICS.

Permanganate of Potash Injections in Asylum Dysentery.—P. W. Macdonald, M.D. (*Lancet*, March 1, p. 588).—In an outbreak of dysentery in the Dorset County Asylum the writer found this treatment very successful. As soon as the case was diagnosed the lower bowel was washed out night and morning with a weak solution (from 2 to 4 grains to the pint) of permanganate, the instrument used being an ordinary enema syringe. The motions rapidly lessened and seldom had the treatment to be prolonged beyond the third day. In every one of the cases—and several of them were severe—the patients recovered. Not only was the treatment successful, but by the early use of the injections the outbreak was cut short. Now the writer treats every case of a dysenteric nature or of severe diarrhoea by this method and successfully. Apparently the permanganate acts in its double capacity of a disinfectant and a styptic. In the more severe cases milk as an article of diet was found unsatisfactory. It was not only rejected but it increased the intestinal irritation. The main article of diet used was a mixture of special beef-tea and specially prepared rice, with a liberal allowance of port wine. To ensure success the treatment should be commenced early and thoroughness is essential. In only one case after the permanganate treatment had been adopted was there an opportunity of examining the bowel post mortem. A demented melancholic had a severe attack of dysentery. The injections were given for 5 days and the patient was convalescent in 3 weeks. Soon afterwards she developed acute double pneumonia to which she succumbed. At the necropsy the mucous membrane of the rectum showed numerous healed ulcers—very different from the ulcerated congested state of the bowel in fatal cases of dysentery.

Parachlorophenol and "Menthorol" in Tuberculous Laryngitis.—August Logucki (*Therapeut. Monatshefte*, Jan., p. 17).—Though the claims of Simonowski and Spengler as to the value of parachlorophenol as a local application in tuberculous laryngitis were exaggerated, it is probably more useful than any other drug. If there are no advanced pulmonary changes, and the laryngeal ulceration is superficial and not too extensive, complete cicatrization may be obtained. Even if the lesions are extensive great improvement may be expected if the general health is moderately good. The disadvantages are its unpleasant taste and smell, which many patients cannot endure, although the initial sensation of burning in the throat usually gives place to an alleviation of the pain and more comfortable deglutition. A 5 to 10 per cent. solution in glycerine is applied on a brush. The writer states that the advantages of parachlorophenol may be retained and its disadvantages removed by the addition of menthol. This combination surpasses all other known applications. Parachlorophenol and menthol form a thick fluid, of comparatively pleasant smell and taste, which is known commercially as "menthorol." Five, 10, and 15 per cent. solutions of menthorol in glycerine are employed as local applications. General hygienic should be combined with the local treatment.

The Prevention of Rheumatic Endocarditis.—Dr. C. O. Hawthorne (*Polyclinic*, Feb.) insists on the importance of attempting to prevent the rheumatic endocarditis of children. The clinical conception of rheumatism as an acute polyarthritis with the possibility of

endocarditis, which is fairly adequate in the adult is quite inadequate in the child. Such manifestations as chorea, erythema, anæmia, tonsillitis, and subcutaneous nodules may eclipse the symptoms of arthritis, which are usually inconspicuous. Further, any of these manifestations in the slightest form may be the only sign of rheumatism. On the other hand, the stress of the disease falls upon the heart, and endocarditis is common. Hence the importance of care in regard to the heart. The most effective means of preventing endocarditis is rest. In the adult it is ensured by the pains, but in the child they are largely wanting. The parents think the illness trivial, and the child very often comes under medical observation only when the heart is affected. If they appreciated the danger something might be done to lessen the frequency of endocarditis. It is not enough that the profession recognises such incidents as a sore throat, a slight febrile attack, general weakness, "growing" pains, etc., as members of the rheumatic series, accompanied by the risk of endocarditis. The fact that these and other events are signs of rheumatism and attended by heart disease should be impressed on the parents of rheumatic families, so that their children may receive from the onset of the attack the protection of complete rest.

The Presence of Tetanus Spores in Commercial Gelatine.—Levy and Bruns (*Deutsche Med. Woch.*, Feb. 20, p. 130) have examined 6 samples of gelatine, and found tetanus spores in 4. From 2 to 3 gm. of gelatine were dissolved in 100 c.c. of broth, and the solution was placed in the incubator at 37°C for 8 or 10 days. With other spores adhering to the gelatine the tetanus spores developed in the lower layers of the culture into bacilli, and secreted the tetanus toxin. The culture was then filtered, and 0.3 to 0.4 c.c. of the filtrate was injected in mice, which died within 2 or 3 days of typical tetanus. In one case a smaller dose (0.2 c.c.) produced chronic

tetanus of the posterior limb into which the injection was made. Four to 5 c.c. of the filtrate was fatal to guinea pigs. In the dirty greyish sediment which formed in the cultures, typical drum-stick bacilli with terminal spores were found, and the direct injection of this sediment into animals usually produced tetanus. The method, however, is not advisable, since the other spores and bacteria present, especially those of malignant œdema, may kill the animal before tetanus has time to appear. Some of the spore-forming organisms present in gelatine are very resistant, and heating to 80°C for 1 hour was insufficient to obtain pure cultures of the tetanus bacillus.

The question whether it is possible to sterilise gelatine sufficiently for hypodermic injection is at present unsettled. It is usually stated that a jet of steam at 100°C will kill the spores of tetanus in 8 minutes. In the writer's experience this is insufficient. The spores of many organisms vary in resistance according to their source, and it is possible that this is true of different specimens of tetanus bacilli. Another unsettled question is whether sufficiently prolonged heating does not destroy the value of gelatine as a hæmostatic. If, as Zibell (*Münch. Med. Woch.*, No. 42, 1901) maintains, the active principle is the calcium contained in gelatine in a soluble form, prolonged heating at 100° or more would not destroy it. If the therapeutic activity is due to the power to "set," prolonged heating would be prejudicial.

Tetanus after Injections of Gelatine.—Kuhn (*Wien. Med. Woch.*, Jan. 18, p. 138) removed adenoid vegetations from the nasopharynx of a hæmophilic boy. As the hæmorrhage continued, subcutaneous injections of a solution of gelatine which had been "sterilised" by a chemist, were given. The needle-track became gangrenous a few days later. The following morning there was trismus, which developed into general tetanus in the course of the afternoon, and ended fatally. Experiments

on rabbits proved conclusively that the tetanus bacilli had infected the organism through the needle-track. Similar cases have been reported in England.

Ergotin as a Prophylactic and "Specific" in Puerperal Fever.—Dr. Solt (*Therap. Monatshefte*, Feb., p. 57).—Ergotin sets up uterine contractions by which the thin flaccid walls of the uterus become thick and firm. In this way the lymph spaces become narrower, and the paralysed blood vessels contract. The œdema and cloudy swelling which Schröder believed must precede the invasion of the organism are thus prevented, and the passage of the germs through the contracted vessel walls into the circulation is hindered. Small doses of ergotin never produce strong, cramp-like uterine contractions, but normal ones. These begin in the adnexa, and pass towards the uterine cavity. In this way the lymph stream, with the organisms and their toxins are driven back to the uterus. The contractions favour the discharge of the lochia and the removal of any decomposing tissues.

The writer has treated 30 puerperal patients in their own homes with ergotin. Some were in a grave condition. In 2 cases, on the third day of the puerperium, the temperature and pulse were 104°, and 110, and 102.2° and 120, respectively. There was great hypogastric pain, and the uterus was very tender. The lochia were very foul. Another patient, on the 6th day, was in extreme danger. She had had several rigors, and was wildly delirious. The uterus was large and soft, the temperature was 103°, and the pulse was weak and uncountable. All the patients treated with ergotin rapidly recovered.

When pulse or temperature indicates febrile

changes in a puerperal patient, the writer recommends that 10 to 20 drops of the following mixture should be given thrice daily :—

Ergotini	...	...	...	5 parts.
Aq. Menth. pip	...	...	...	20 parts.

Oxygen Inhalation in Fetid Bronchitis.—Frederic Vicars, M.D.—(*Brit. Med. Jour.*, Mar. 1, p. 509).—A man, aged 65, had chronic bronchitis. The sputum became very offensive. Benzoin and creolin inhalations were useless. Dr. G. Stoker's oxygen apparatus, which consists of a cubic foot collapsing bag with india-rubber tube and nasal attachment was procured. The bag was filled with oxygen gas from a cylinder, and the nasal end inserted in one nostril, the other being plugged with cotton wool. The patient then allowed the bag to empty its contents very slowly through the nasopharynx, breathing quietly during the process. Next morning there was only a slight taste of offensive sputum. Oxygen was inhaled continuously for several hours in the same manner. The sputum became less and entirely free from odour. The patient also felt better. The oxygen treatment was continued for a week.

The Salt Pack in Rheumatoid Arthritis.—Jonathan Hutchinson, F.R.S., (*Polyclinic*, Jan., p. 45) knows no remedy so almost universally effectual in removing irritation and synovial effusion in rheumatoid arthritis, as the salt pack. It consists of flannel soaked in a saturated solution of common salt, which is wrapped round the affected joint, covered with oiled silk and a bandage, and kept on the whole night. It should be applied every night until the cure is affected.

SURGERY.

Hæmatemesis and Purpura in Appendicitis.—G. Lovell Gulland, M.D., F.R.C.P., and R. Robertson, M.B., C.M., B.Sc. (*Scottish Med. and Surg. Journ.*, Feb., p. 153).—A man, aged 32, of good physique, and temperate habits, was in fair health until the morning of Dec. 22. He had taken on the previous night a hearty supper of beef-tea and "potted head." He woke early in the morning with gastric pain, and vomited several times. He stayed in bed, and had turpentine cloths applied to the abdomen. Next day he was better and went out for an hour or two. On the third day the sickness returned, though it was not great, and the bowels acted. On the fourth day, medical advice was sought because he was much worse and vomited coffee-ground material. A hypodermic injection of $\frac{1}{4}$ gr. of morphia arrested the vomiting.

In the afternoon he was pale and collapsed with a normal temperature and a pulse of 120 small and soft. Over the chest, abdomen, and back was a rash consisting of slightly elevated, closely set papules, into and around most of which hæmorrhage had occurred. The abdomen was red (presumably from the turpentine, which had again been applied on the third day). The rash did not extend to the face, arms, or legs. The patient was lying comfortably on his back, with the legs extended, did not complain of pain, and was able to move in bed without discomfort. The abdomen was not noticeably distended. There was slight tenderness only in the epigastrium, but no great pressure was used in view of the hæmatemesis. The liver dulness was normal, except that in the middle line the lower margin was an inch or two higher than usual. There

had been slight nausea and retching during the day.

The diagnosis was obscure. It was thought that while the rash might have been caused partly by the turpentine stupes, they could hardly have caused it on the back, where the purpuric character was more marked than on the abdomen. Its presence was therefore felt to be against a diagnosis of either gastric ulcer or cancer, or cirrhosis of the liver, which might have caused the hæmatemesis. Moreover, the patient was more prostrated than he should have been from the hæmatemesis, considerable though that had been. It was thought that the hæmorrhage, by causing collapse and bringing down the temperature, was masking some febrile condition—one of the fevers associated with purpura or some less definite septic condition. The urgent indication seemed to be to arrest the bleeding, and measures to this end were adopted. But the patient sank and died early next morning.

NECROPSY.—Only the abdomen was examined. There was purulent peritonitis. The vermiform appendix was about 3 in. long, black, gangrenous in its whole length, and perforated in several places. There was much pus round it. In the lower abdomen the intestines were reddened and their interstices were filled with purulent lymph. There were 2 or 3 ounces in the pelvis. The upper abdomen contained some sero-purulent fluid, but no acute inflammation was present. The liver was fixed to the diaphragm by firm adhesions of old standing, and the stomach and omentum were also attached to the liver by adhesions, though less firmly. The stomach contained about half-a-pint of coffee-ground material. There was no ulceration,

but the mucous membrane was intensely congested, especially towards the pylorus and was covered with small petechiæ, which at the pyloric end were confluent and from which the bleeding seemed to have occurred. The upper part of the small intestine was in the same state, and was full of altered blood.

When the patient was seen diagnosis appears to have been impossible. The symptoms throughout pointed to the stomach rather than to the intestine. In the late stages of peritonitis a normal temperature often occurs and hæmatemesis is not unknown, though rarely in so large amount as in this case. The misleading elements were the absence of pain after the first day, the absence of tenderness and distension, and the purpuric rash. The last must have been due to sepsis; there were probably profound blood changes. Purpura must be extremely rare in peritonitis, as the writers have found no record of it.

See also "Hæmatemesis in Appendicitis" ("Review," Vol. IV., p. 499).

Persistent Appendicular Colic caused by Thread-worms in the Vermiform Appendix.—R. Hamilton Russell, F.R.C.S. (*Intercolonial Med. Jour. of Australasia*, Dec. 20, p. 576).—A boy, aged 9, was admitted to hospital in Dec., 1900. For 2 or 3 years he had complained of abdominal pains, which appeared to be excited and aggravated by going up and down stairs. He also frequently had abdominal pains while in bed, and sometimes was awakened by them. He was all this time unable to run about and play, but rarely did a day pass without an attack of pain which he always referred to the region of the umbilicus, and ascribed to a small umbilical protrusion which was present. He was admitted with the object of operating upon the protrusion, but while in hospital he had no attacks of pain, even on examination of the abdomen. He was therefore discharged.

Seven months later he was re-admitted, as the symptoms had become aggravated. There was no tenderness in the region of the appendix, but after the abdomen had been under examination for a minute or two he commenced to cry and continued to do so for several minutes, complaining of pain in the stomach. This happened on several occasions. It was therefore decided to explore the abdomen. The umbilicus was included in an elliptical incision and removed in its entire thickness; no adhesion or anything else abnormal was found. The ascending colon was then drawn out of the wound until the appendix appeared. It was very long and tortuous, and appeared to be distended. It was removed, and the abdomen closed by suturing of the peritoneum and aponeurotic structures in layers. Recovery was uneventful, and he left hospital 3 weeks after operation, completely relieved. He has remained perfectly well since. The lumen of the appendix was dilated, the mucous membrane thickened and injected, there was considerable excess of lymphoid tissue, and the cavity contained a large number of threadworms. The mother stated that all her children were infested.

"Internal Derangement" of the Knee Joint.—By Herbert W. Allingham, F.R.C.S. (*Lancet*, March 15, p. 731).—"Internal derangement of the knee-joint" was originally applied to cases of damage or displacement of one of the semilunar cartilages. But the lesion is by no means always of this nature. Indeed a variety of lesions in the knee-joint may all cause the symptoms of "internal derangement." Some cases improve after the joint is opened, although no lesion is discovered—a fact analogous to the cure of abdominal pain by laparotomy.

EARLY TREATMENT.—Suppose a young man has received a blow upon, or has twisted, one of his knees. The joint becomes fixed for a time,

very painful, and rapidly swells. Perhaps something is felt to move or to lock in the joint, or to protrude, and on pushing this in the joint can be moved again. The treatment is splinting for a period varying from 1 to 3 weeks, followed by massage, passive movements, and exercises. Thus rest is first given so that the lesion may heal, the split cartilage join, the displaced one become fixed again, the torn alar ligament mend, etc. Then the slackness of ligaments and muscles consequent upon the distension and the disuse of the joint is remedied by massage and movement. The supporting structures being restored, when the joint is again used there will be no tendency to recurrence. In a certain percentage of cases this treatment fails and the trouble recurs. Then an operation must be performed. Similarly, cases of numerous attacks require operation. Those cases in which a loose body can be felt to move to widely different positions in the joint and those in which a loose cartilage protrudes from the joint will not improve without operation.

THE OPERATION.—The writer makes a 3-in. vertical incision 1-in. to the inner side of the patella and extending to an inch below the head of the tibia, unless there is special indication, as the presence of a foreign body, for incising at some other situation. An advantage of the vertical over the transverse incision is that the extension of the vasti on to the tibia, an important supporting structure, is not divided; moreover, the vertical incision is easily prolonged upwards when necessary for examination of the large synovial pouch about the patella. Care must be taken to clip and tie every bleeding point, and the joint is to be literally squeezed dry before it is closed. The joint should not be washed out with antiseptics, and drainage should not be employed. But in a case in which a loose body was certainly present before the joint was opened and could not afterwards be found in spite of the freest digital exploration, the writer flushed the joint with boiled water, and the body literally floated out. Such a manoeuvre may

occasionally be necessary and has led to no harm. In another case even this proceeding failed to reveal a loose body the presence of which was certain. It became fixed presumably in the posterior part of the joint behind the crucial ligaments, and gave no further trouble. The writer's experience favours removal rather than fixation of loose semilunar cartilages, and the same applies to torn or hypertrophied alar ligaments or local hypertrophy of synovial membrane. In closing the wound the sutures should be passed so as to include the cut synovial membrane.

AFTER-TREATMENT.—The splints should be taken off within a week. Passive movements are begun as soon as the incision is healed, and are combined with massage. If in spite of exercises and massage there is some stiffness the joint must be freely moved under an anæsthetic and then daily massaged and freely moved to prevent recurrence.

The writer gives a table of 59 cases, all of which presented either the characteristic symptoms with locking of the joint, or else weakness with recurrence of pain and swelling, which is often the only evidence of damaged semilunar cartilage. They illustrate the following conditions: (1) semilunar cartilage, internal or external, split, loosened or displaced, torn from either or both extremities or from coronary ligaments; (2) loose bodies—the body may be quite free or may be attached by a pedicle; (3) a torn or hypertrophied alar ligament or hypertrophied fringe of synovial membrane; (4) rheumatoid arthritis—roughened cartilage, thickened synovial membrane, and osteophytic outgrowth; and (5) no obvious derangement. Some points help in differentiating between these conditions, although symptoms strongly suggestive of one lesion may prove to be due to another. In damage to a semilunar cartilage there are generally: (1) distinct history of injury originating the trouble; (2) a well-defined site of pain on the inner or outer side of the knee according to the cartilage damaged; (3) no foreign body palpable; (4) no creaking in the joint. These

same features also generally characterise cases in which there is lesion of an alar ligament or localised hypertrophy of synovial membrane.

When a loose body is present the symptoms may be exactly similar to those caused by semilunar damage. Sometimes, however, the body can be moved into widely separate portions of the joint and felt in its different situations. Similarly, a very loose semilunar cartilage may sometimes be diagnosed by its protrusion at the side of the joint. Such a cartilage, however, may be simulated by a rheumatoid excrescence.

Chronic Empyema of the Frontal, Ethmoid and both Sphenoid Sinuses, with Extensive Necrosis and Adenoma of the Posterior Ethmoidal and Sphenoidal Regions.—Joseph H. Bryan, M.D. (*Trans. American Laryngol. Assoc.*, 1901, p.65).—A woman, aged 48, was seen in Jan., 1899. She complained of excruciating headaches on the left side, most intense in the frontal region. The pain had become constant and unbearable. The headaches began some 7 years previously during convalescence from pneumonia, when she had violent pain in the head and great prostration. The pain ceased within 48 hours, but afterwards she was annoyed by the dropping of mucus into the post-nasal space. The secretion increased, and in 1899 had become foetid, and there was morning nausea. The headaches increased, and whenever the flow diminished were intensified.

Pressure over the supra-orbital ridge and under it near its inner angle caused great pain. Rhinoscopy revealed some swelling of the left middle and inferior turbinals, and slight deviation of the septum to the right. Thick yellowish secretion flowed into the post-nasal space over the posterior extremity of the middle turbinal. The parts were cocainized and the probe revealed extensive caries of the anterior ethmoid region. Transillumination of the frontal and maxillary

sinuses gave negative results. At the patient's request an external operation was deferred.

April 22, 1899.—She complained of great pain in the left eye, "blurred vision" and a feeling that the eye was larger and heavier than the right. The anterior ethmoidal cells were frequently curetted, and from time to time diseased bone was removed, affording temporary relief from pain by establishing freer drainage. Improvement was transitory.

May 10.—A large piece of bone was removed from the anterior ethmoidal region with the curette, which admitted a canula into the frontal sinus, and irrigation with a saturated solution of boracic acid brought away much thick foetid pus. The frontal sinus was thus irrigated on several occasions, but the pain increased. Probing revealed such extensive necrosis that an external operation was necessary.

June 4.—An incision down to the bone was made, from just within the supra-orbital notch to the nasal eminence. The flap, which included the periosteum, was elevated, and the frontal bone was trephined. The sinus was filled with thick foetid pus and granulation tissue, and the probe revealed softening of the posterior wall and extensive necrosis of the septum. The roof of the orbit was so necrosed that a piece about half-an-inch in diameter had to be removed. After curettage of all the diseased bone within the sinus the ethmoid bone was found extensively necrosed. With the little finger within the nose as a guide the curette was passed from the sinus into the nasal cavity and all the diseased bone that could be felt was removed, leaving a large communication between the sinus and the nasal cavity. The sinus was irrigated with bichloride of mercury, 1 in 3,000, its walls were touched with a 20 per cent. solution of chloride of zinc, and it was packed with iodoform gauze, one end of which was brought down through the nose to act as a drain. The edges of the periosteum were drawn together with catgut, of the skin with silk. The wound was hermetically sealed with iodoform and collodion.

At the end of the second day the gauze drain was withdrawn through the nose. A canula was passed up into the sinus, which was irrigated with a saturated solution of boracic acid. The stitches were removed on the sixth day, perfect union having taken place. Under daily irrigations the secretion rapidly diminished, and in 3 weeks practically ceased. The headaches were completely relieved and convalescence was rapid.

July 15.—The patient contracted a severe cold in the head, and in 24 hours the skin over the left frontal sinus and of the upper and lower lids of both eyes became red and swollen. The pain was "agonising," and as no secretion passed from the frontal sinus into the nasal cavity, the practitioner in attendance decided to make an opening at the point of greatest swelling, about an inch above the left supra-orbital ridge. Much pus was removed affording considerable relief. Next day the discharge was profuse, and as the passage between the nose and the frontal sinus had closed the external opening was enlarged, and the communication re-opened. The external wound was not closed. Although the pain was somewhat diminished the supuration continued.

In Oct. there was an opening into the frontal sinus, about half-an-inch above the left supra-orbital ridge and a small fistulous tract below this ridge, just above the internal canthal ligament, through which pus discharged in large quantities. There was also a free discharge of pus through the upper wound; but little, if any, passed into the nose. A probe passed into the sinus through the external wound revealed extensive necrosis of the floor, especially of that portion in relation with the ethmoid cells. The communication between the nasal cavity and the frontal sinus having closed, it was impossible to pass a probe from the nose into the sinus.

The open method of treatment was followed for several months, the cavity being irrigated daily with antiseptics, a gauze wick inserted through the external wound to facilitate drainage, with the expectation of being able later to

re-establish by curettage the communication between the frontal sinus and the nasal cavity. But the condition growing worse, it was decided to re-open the sinus.

Jan. 7th, 1900. An incision was made in the line of the previous one and the sinus was exposed. The upper half was filled with firm granulation tissue and there was much pus on the floor. The probe revealed extensive necrosis of the ethmoid bone and of the floor of the sinus. As much of the diseased ethmoid as could be reached with a curette passed through the frontal opening was removed, using the little finger within the nose as a guide. After irrigation the wound was closed as in the original operation. During the next 24 hours the patient was delirious, and complained of intense vertical and occipital pain. The sinus was irrigated daily. The stitches were removed on the sixth day, good union having been obtained.

Feb. 10. The patient was seized with violent frontal and temporal headache with obstinate nausea and vomiting, and the temperature rose to 100°. The parts were so swollen that the canula could not be passed for irrigation of the frontal sinus. On probing under the middle turbinal, a distended ethmoidal cell was penetrated and much foul pus was discharged. This gave some relief, but constant dull headache remained. Occasional curettage of the ethmoid bone was performed for several weeks. Portions of the middle turbinal were removed with a curette and cutting forceps. The headaches continued with more or less severity until early in May, when they increased, the pain being referred chiefly to the supra- and infra-orbital regions and to the left eye.

June 1. Pain in the left eye was much worse, and there were photophobia, lacrymation and conjunctival congestion. Palpation, which was very painful, showed swelling along the inner part of the floor of the orbit, which extended upward to the internal angle. The ophthalmoscope showed pulsation of the ophthalmic veins.

As the ethmoidal cells in relation to the inner wall of the orbit were evidently infected an incision, commencing at the junction of the middle and outer third of the supra-orbital ridge, was made through the skin and periosteum along the ridge to its internal angle, then curved and carried along the border of the nose to within an inch of its tip. The periosteum was elevated. A bony swelling was found along the inner part of the floor and the inner wall of the orbit. The lateral wall of the orbit above the region of the os planum was so thin that further delay would have resulted in an orbital abscess. The weight of a light perforator (passed between the trochlea and internal canthal ligament) was sufficient to penetrate the bone, and a sharp curette passed through this opening brought away pus and soft friable bone. All diseased bone that could be detected was removed. The periosteum was stripped sufficiently to expose the opening previously made into the frontal sinus, which was found to be filled with firm granular tissue. After cleansing the parts a strip of iodoform gauze was passed through the opening in the orbital wall into the nose. The periosteal wound was closed with catgut, the external wound with silk. The line of incision was sealed with iodoform and collodion, and a bandage was applied.

June 4. The gauze was removed from the nose, and the nasal cavity irrigated.

June 20. Decided improvement in general condition. Secretion from the middle ethmoid region was muco-purulent but less.

Oct. 5. There was observed a large triangular bony growth, with its base attached to the middle meatus, extending across the vestibule of the nose. Its removal revealed a firm grayish growth, springing from the ethmoid bone between the middle and superior turbinals, in the region of the posterior ethmoid cells. It blocked the upper portion of the nose and pressed against the posterior portion of the vomer, causing necrosis.

After partial removal, the growth was found to be attached to the anterior wall of the left sphenoidal sinus. With a knife specially made for the purpose (Fig. 1.) the sphenoidal cavity was opened a bony flap being removed from its anterior wall. This knife has two sharp edges, the lower and the anterior; with the latter a forward movement can be made, cutting through the anterior wall. Then by reintroducing it into the cavity at a different angle, a bony flap can be removed, leaving a large opening into the sinus. After thus opening the left sphenoidal sinus it was found filled with thick, foul pus, the evacua-



FIG. 1.

tion of which gave great relief. The occipital headaches, which had been almost constant, ceased for a while. The probe revealed extensive necrosis of the sphenoid bone. From time to time portions of bone were removed with cutting forceps, giving only temporary relief from pain, for as fast as the growth was removed, it reformed, blocking up the opening and thus impeding drainage. It was necessary to cut away the growth about once in 10 days, and later more frequently.

May 1, 1901. Both sphenoidal sinuses were the seat of suppuration, and nearly the whole of the ethmoidal cells on the left side had been

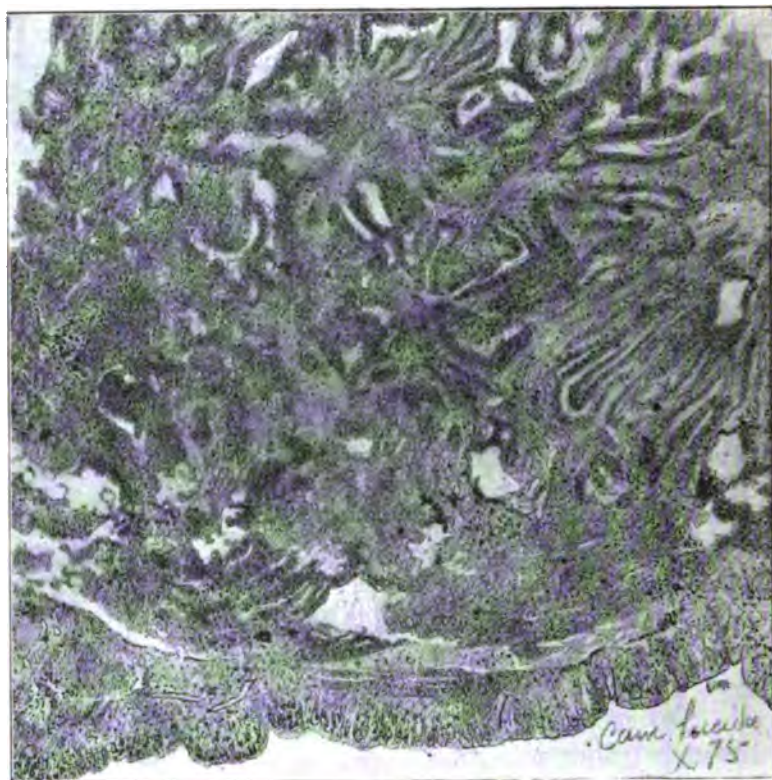


FIG. 2.

removed. The anterior wall of the left sphenoidal cavity, part of the roof and floor, and the partition between the sinuses had been removed; yet, in spite of extensive curettage, it was impossible to keep the cavities properly drained, owing to the position and rapid development of the adenomatous growth. The deeper parts of the sphenoid bone seemed to be becoming involved; the patient's strength was rapidly failing, and her sufferings had greatly increased. A fatal termination seemed imminent; but treatment was continued and, by Oct. 24, the entire growth had been removed, the suppurative inflammation in the sphenoidal sinuses had ceased. Now only one small cell in the posterior ethmoidal region is the seat of suppuration.

The adenoma was probably the result of the prolonged inflammation. Sections showed small

irregular masses of low grade inflammatory tissue, the connective meshwork being filled with the products of inflammation, and with a typical proliferation of epithelium, often arranged in the form of imperfect tubules and acini. In places, there were irregular patches of epithelium and epithelioid cells, blood vessels and true glands being almost absent. Probably the growth originated in the glands of the mucosa. Figs. 2 and 3 represent sections. Pure adenoma in the nares is very rare, but fibro-adenoma, myxo-adenoma, angio-adenoma, papillary-adenoma, adeno-sarcoma and adeno-carcinoma, are relatively frequent. The principal features of these growths are their rose or grayish colour, firm consistency, and comparative freedom from hæmorrhage.

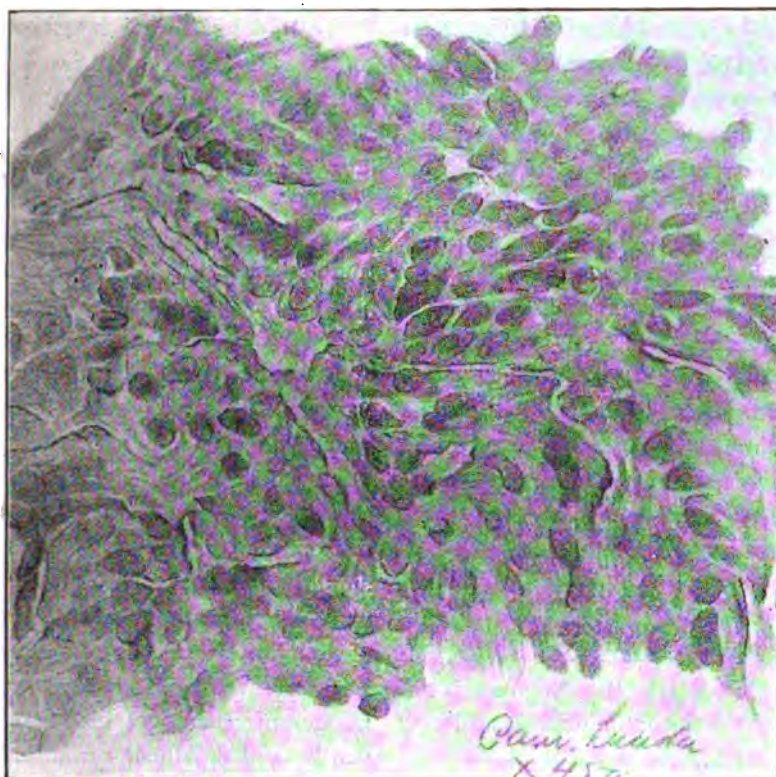


FIG. 3.

Removal of the Whole Tarsus for Club-Foot.—Lucas-Championnière (*Bulletin de l'Académie de Méd.*).—The treatment of club-foot has in the past been confined in the greater number of cases to the section of tendons and ligaments. Where removal of bone was called for it has been done as sparingly as possible, the restoration of the shape of the foot being aided by the subsequent use of orthopedic apparatus. The writer has for some 13 years employed a method which though chiefly applicable to the more severe cases may from its simplicity and safety be preferred even in slighter deformities. He carefully preserves the ligaments and tendons as they are the elements on which depend repair and the restoration of muscular action. All the tarsal bones are removed through an incision on the dorsum of the foot, including

the anterior third of the calcaneum, and often the posterior part of the fifth metatarsal. In extreme cases the whole calcaneum may require removal except the process for the insertion of the tendo Achilles. The parts should then be sufficiently plastic to give the foot the desired form, the correction of the deformity being slightly exaggerated. The metatarsals are brought against the remains of the calcaneum, and easily maintained there without the aid of apparatus. Movement is begun about the fourth day and rapidly increased; the patient may be permitted to walk in 3 to 6 weeks. No apparatus is used, all that is necessary being a slightly stronger shoe than usual.

A man, aged 30, who suffered from extreme talipes varus without equinus (the most difficult deformity to correct) was shown to the Academy

a year after operation by this method. His tarsus had been completely removed, no fixed apparatus being employed. The foot was shortened, but of good shape, there being no lateral movement and free flexion and extension. He walked firmly on the sole of the foot, and without pain. He had been discharged from hospital in 2½ months.

In all 31 cases have been treated in this way. In the first 8 less than the whole tarsus was removed. In all the result was satisfactory, there being only one case—of extreme equinus—in which tenotomy was necessary. Rigorous antiseptic precautions are necessary. Of the operations for severe club foot, this is at once the most simple and efficient.

Angioma of the Breast.—Dr. C. F. M. Althorp (*Lancet*, Oct. 5, p. 914).—Angioma is one of the rarer new growths of the breast, and may occur in both sexes. The number of recorded cases is very small.

On Jan. 12, 1901, a boy, aged 7, was admitted to hospital with an enormous tumour in the region of the right breast. At birth a small swelling of the size of a hen's egg was noticed near the right nipple. As the boy grew the tumour slowly increased. Whilst at play on Dec. 29, 1900, he received a severe knock on the tumour, which was followed by a sudden increase in the size with discolouration of the skin. The swelling rapidly increased, so that in 14 days it was twice the size it was before the accident. The overlying skin was discoloured in places, and the superficial veins were enlarged. The swelling as a whole was freely movable over the front of the chest-wall, its surface was lobulated, and in places there was evidence of fluctuation. The boy was in good health.

On Jan. 16, under ether, the tumour was removed. A curved incision was made along the upper margin and the flap of skin was dissected upwards. The wound was deepened

until the pectoralis major muscle was reached. Part of the muscle was removed with the growth. In this way the tumour was undermined and separated from the chest-wall. A second flap was raised along the lower border, and a third flap from the upper and outer borders of the growth. In a few places small cysts were opened, and much dark blood escaped. The tumour was rapidly enucleated. The after-history was uneventful.

After the operation the growth was cut into and 30 ounces of dark-coloured liquid blood escaped. The tumour was formed of small cysts which did not communicate with one another. Microscopic examination showed (1) much unstriped muscle, (2) cavernous tissue, and (3) myxomatous tissue. The tumour appears to be similar to those described by Virchow as "myomata of the unstriped muscular tissue of the areola and nipple, with telangiectasis." Before removal the tumour measured 21½ inches in circumference, 11½ inches from above downwards, and 14½ inches from side to side.

The Diagnosis of Cystitis from Pyelitis.—G. Rosenfeld (*Centralbl. f. Inn. Med.*, Feb. 22, p. 193).—In the differentiation of cystitis and pyelitis the most important points are (1) the reaction of the urine, (2) the shape of the red and white blood corpuscles, and (3) the relation between the quantity of pus and the percentage of albumin. The reaction is acid in pyelitis, unless there is also cystitis. It may also be acid, if there is "acid" cystitis, such as may occur in tuberculosis or with uric acid calculi. The white corpuscles found in the urine are rounded if of vesical origin, but amœboid and irregular if they come from the renal pelvis. There is practically no alteration in red corpuscles of vesical origin unless there is a vesical tumour, but those of renal origin are more or less crenated and deficient in hæmoglobin. As regards the characters of epithelial cells found in urine, those from the renal pelvis can be recognised only when massed

together, or, if isolated, when they are enclosed in a clump of leucocytes. They are rounded and have a glistening nucleus. The imbricated arrangement of the cells of the renal pelvis is, in spite of text-book statements, never recognisable in urine, nor does pavement epithelium point to cystitis. On the contrary if pavement cells are numerous, and leucocytes comparatively scanty, the case is probably one of urethritis. The third point is of most importance. It is sufficient to allow the urine to stand until the greater part of the sediment has been deposited; centrifugalisation is not required. In cystitis the albumin never exceeds 0.1 to 0.15 per cent. however much pus is present. In pyelitis the percentage of albumin always exceeds the maximum for cystitis, however small the amount of pus may be, and with a large amount of pus may rise to 0.3 per cent. The following are rough but sufficiently accurate rules: If there is a deposit 1 in. deep in a urine glass of 1 litre capacity the amount of albumin will be about 0.1 per cent. in cystitis, and 0.3 per cent. in pyelitis. With a deposit $\frac{1}{2}$ in. deep there will be about 0.06 per cent. of albumin in cystitis, but as much as 0.2 per cent. in pyelitis. With a sediment not exceeding 1 or 2 mm. in depth, there will be only a trace of albumin in cystitis, but 0.1 per cent. in pyelitis. If the sediment is scarcely visible there will be a distinct trace of albumin in pyelitis, but none in cystitis.

Jan., p. 16).—According to recent authorities, among them Felix Franke, laparotomy should be performed in gastric ulcer (1) for acute perforation, (2) for chronic cases of perforation with consecutive abscess formation, (3) for uncontrollable vomiting, insupportable pain, or progressive emaciation, and (4) for uncontrollable hæmatemesis or smaller hæmorrhages if repeated. Indications 1 and 2 alone are in Delachaux's opinion absolute; the symptoms of the third group may be due to a gastric neurosis which would be unbenefited or improved only temporarily by gastro-enterostomy. Even if they depend on gastric ulcer they do not indicate an operation. Neither is hæmatemesis an indication. For gastric ulcers, which give rise to the symptoms of the third and fourth group, are usually curable by the irrigations with a 2 per cent. solution of perchloride of iron, introduced by Prof. Bourget, of Lausanne ("REVIEW," Vol. III., p. 526). No single failure has been observed in the Cantonal Hospital in the case of hæmatemesis. In the third group failure has only occurred when the ulcer has produced pyloric stenosis or undergone malignant degeneration. Pyloric stricture is an indication for operation, if organic, and not merely spasmodic. Daily irrigations with perchloride of iron will generally decide between the two, the symptoms of stenosis disappearing after 2 or 3 weeks, if due merely to reflex irritation.

If the perchloride of iron method were practised systematically operation would be limited (1) to cases of acute or chronic perforation, (2) to cases in which failure to cure by the irrigations indicates the presence of organic pyloric stenosis or malignant degeneration.

The Indications for Operation in Gastric Ulcer.—C. Delachaux (*Therapeut. Monatshefte*,

OBSTETRICS AND GYNÆCOLOGY.

Abandonment of Vaginal Examination in Labour.—W. A. Briggs, M.D. (*American Med.*, Feb. 1).—The information necessary to conduct labour can be obtained by other means than vaginal examination, and more fully, more exactly, at an earlier period of labour, and without the possibility of infecting the genital tract. These means are the usual ones of abdominal palpation and auscultation, pelvimetry, and those the writer now advocates—digital examination per rectum, simple and bimanual, and palpation of the perineum.

The technique of digital examination per rectum is similar to that of digital examination per vaginam :—Cleanse and disinfect the vulva and adjacent parts; place the patient on her back with the knees well flexed, and close to the edge of the bed; sit beside the bed on a low chair facing the patient; introduce the disinfected and gloved right hand under the patient's right knee and the index finger into the rectum, carrying, if possible, its tip to the sacral promontory, and the tip of the thumb to the pubes, and by their divergence estimate the conjugate diameter; place the left hand on the lower abdomen just above the pubis, and by gentle bimanual palpation map out the presenting part and determine its size, position, descent, mobility, and stage of evolution; should the head present, dip the fingers of the left hand down about the chin or the occiput, and the position may be determined even if the fontanelles and sagittal suture cannot be felt. With the tip of the finger carefully search for the os and cervix, and if they cannot be recognised continue the search during and after a pain, when, if dilation has begun, the alternate tension and relaxation of the cervical ring and of the bag of waters will direct attention aright; the sagittal

suture and fontanelles should be sought and identified. Should the head recede before the examining finger it may be fixed by the left hand from above and even made more accessible by being pushed down into the pelvis. The simplicity and the clearness of this method of examination, and its results are surprising. The presentation, position, size, mobility, progress, os, cervix, bag of membranes—all may be made out clearly. Diagnosis of the position may be made at an earlier stage by the rectum than by the vagina.

Palpation of the vulva and perineum is not so important as rectal examination, but when the head descends well into the pelvis the mobility and the progress of the presenting part may be determined and the necessity of internal examination obviated. It is best performed by separating the index and second fingers of the pronated or supinated hand and pressing their tips (one on either side of the commissure) against the vulva or perineum during and after a pain. By these means, in all but operative cases, vaginal examination will be avoided.

Subcutaneous Emphysema during Labour.—Sigmund Székely (*Pest. Med.-Chir. Presse*, Oct. 6, 1901, p. 950).—A woman, aged 29, became pregnant towards the end of Aug., 1900. Eighteen months before she had suffered from pleurodynia, cough, and occasional slight hæmoptysis, but had otherwise been healthy. The cough returned at the beginning of pregnancy, but afterwards disappeared completely. Labour commenced on June 2, and the liquor amnii escaped. On June 3 the pains were feeble. On June 4, at 4 a.m. the os was completely dilated,

and the pains were strong. Suddenly the right half of the neck and face became swollen. The right eye could not be opened owing to swelling of the lids. In the course of the forenoon the swelling spread to the whole of the face, the neck, chest, back, right arm, and abdomen. A well developed male child was born spontaneously at 1 p.m. on June 4. On June 6 the swelling, which was such that the circumference of the head was nearly twice the normal, had extended to the symphysis pubis. The overlying skin was normal. Palpation of the swollen parts produced crepitation and a sensation as of pressure on an air-cushion. The uterus was well contracted and reached midway between the symphysis and umbilicus. In the vagina were gangrenous patches. The temperature was 103.2° and the pulse 120. Nine days later the temperature became normal. The vaginal sloughs slowly separated, leaving behind a vesico-vaginal fistula. At the end of the first week the outlines of the face became visible and at the end of 3 weeks the subcutaneous air had been completely absorbed. The lungs and heart were normal.

Subcutaneous emphysema is a rare complication of labour. Klots has collected 40 cases; 93.93 per cent. of the patients were primiparæ. The neck is always the first part affected. Owing to the great rise of intra-pulmonary pressure during a prolonged pain some of the alveoli rupture. The escaping air passes between the lung and pleura into the anterior mediastinum and thence into the supra-sternal connective tissue. Predisposing causes are difficult labour, whether due to contracted pelvis, rigidity of the soft parts, or an abnormally large child, and pulmonary disease, especially pleurisy and phthisis. Emphysema may, however, occur when the lungs are perfectly healthy. Treatment consists in the termination of labour as rapidly as possible in order to check extension. The after-treatment is expectant, though in one case the skin was so tense that an incision was employed to evacuate the air. In the writer's case the pelvis was not contracted, but the child was large

and the soft parts were rigid. The great extension was due to the continuance of labour long after the appearance of emphysema.

Intraperitoneal Rupture of Ovarian Cysts.—Kedarnath Das, M.D. (*Edinburgh Med. Jour.*, Oct., p. 354).—A Bengali woman, aged 32, was admitted to hospital in Feb., 1901. Eighteen months before she noticed that the abdomen was enlarging. In 2 months it had become enormously distended. She was said to have been cured by medicinal treatment. Three months later the abdomen again began to enlarge, and in 6 weeks was greatly distended. Again she was said to have been cured by medical treatment. On both occasions she was freely purged. About 4 months later her abdomen began to enlarge for the third time, but treatment proved useless. She was admitted to the hospital in Sept., 1900. The abdomen was tense and shining. There was a shallow depression a little above the umbilicus. Measurements: round umbilicus, $37\frac{1}{4}$ in.; 2 in. below umbilicus, $36\frac{3}{4}$ in.; 3 in. above umbilicus, 38 in.; ensiform cartilage to umbilicus, 10 in.; umbilicus to pubes, 8 in.; R. and L., A.S.S. to umbilicus, 9 in. The abdomen was dull all over and there was œdema of abdominal parietes. Vaginal examination was negative. The fluid was apparently encysted, but the history of two previous recoveries under medical treatment caused doubt as to the diagnosis. Exploratory cœliotomy was declined. On the 19th the temperature went up to 102° , and she vomited. Next morning the temperature came down to 98.4° , but in the evening it rose to 104° . The temperature did not rise any more, but during the next 3 days she felt great uneasiness, with insomnia, but no actual pain or tenderness in the abdomen. On the 24th the abdomen was found to be "distinctly less distended." On Oct. 7, 1900, the abdomen was almost flat and tympanitic all over, except the lower part. She went home relieved.

On Feb. 22, 1901, she returned with enormous distension of abdomen almost in the same condition as in Sept., 1900. Cœliotomy was performed on Mar. 3. The cyst was adherent to the parietes, and was separated by a sweep of the finger around the incision. After the fluid was let out the collapsed cyst could not be drawn through the wound owing to almost universal adhesions to the parietes. The hand had to be introduced to break these adhesions, which were soft. The fluid was gelatinous and measured 280 oz. There were many small secondary cysts. Recovery was uninterrupted.

Evidently the cyst ruptured thrice within a period of 18 months, with subsequent absorption of the fluid. The third rupture took place in hospital. The consequent peritoneal irritation lasted two days, after which absorption commenced. On the 24th, absorption had so far proceeded that there was a distinct diminution in the size of the abdomen. In the next 12 days almost the whole of the fluid was absorbed (*i.e.* about 280 oz. in 15 days). The absence of local symptoms, evidently because of the innocuousness of the cyst contents, is worthy of note. The cause of rupture appears to have been secondary softening of the cyst wall.

See also "REVIEW," Vol. IV., p. 165.

Intermenstrual Dysmenorrhœa.—Anne Mercer Watson, L.R.C.P. & S. (*Edinburgh Med. Jour.*, Oct., p. 356).

CASE.—A married woman, aged 36, complained of pains in the back, and was very anæmic, nervous and irritable. She had been married 12 years, and had 3 children, of whom the youngest was 5. She had had no miscarriages. Her first two labours were difficult, and she said she was "badly torn." The history of intermenstrual pain dated from shortly after the birth of the last child, at the same time the general health began to be affected. Menstruation was always regular and painless. The *Mittelschmerz*

began 14 days after the preceding period, rarely on the thirteenth day. It lasted 3 days, and she practically never escaped. The spasms were like those of ordinary dysmenorrhœa, but there was no discharge of blood or other fluid. She was not confined to bed, but lay down during these 3 days at intervals. Constipation, which was the rule, was worse at these times, and she was much troubled with pain and frequency of micturition. There was considerable leucorrhœa. The cervix felt large and indurated and mushroom-like in shape, with enlarged Nabothian follicles. On both lips was a large area which felt velvety. The uterus was normal in size, freely movable, and lay rather more to the right than normal. White and glairy discharge issued from the external os. The cervix was large and much fissured, both lips were everted, and showed large patches of granular erosions, and several follicles of the size of sago grains. The posterior lip felt hard and shotty. The cervical condition was cured after 4 weeks treatment with hot vaginal douches, ichthyol plugs, and 10 per cent. ichthyol in glycerin applied to the erosions with Playfair's probe. One patch remained obdurate, and was touched with carbolic acid, 1 in 7, with satisfactory result. For the first time for 5 years the patient passed 4 weeks without pain.

This case appears to belong to the first division in Halliday Croom's classification, as there was "pain, but no external manifestation" of discharge, which according to him, is due to ovulation and menstruation not being simultaneous, the pain being produced by the rupture of a Graafian follicle through a thickened ovarian capsule. In almost every recorded case some local lesion seems to have been present, though none was constant. Thickened and dilated tubes, ante-flexed or retroflexed uterus, conical cervix with pin hole os, chronic endometritis with lesions of the os, ovarian tumours, and ovarian thickening—all were found in different cases. *Mittelschmerz* never seems to have been congenital, and most of the patients were married. One patient dated

the onset from an attack of scarlet fever. Many women seem to suffer from this trouble, but in such a mild degree that they pay no attention to it until their general health deteriorates through some intercurrent disorder, and the nervous element begins to prevail. The case confirms the general view, that in most cases there is a local lesion, and that the nervous element is an important factor.

See also "REVIEW," Vol. III., pp. 256 and 511.

Operative Treatment of Fibroid Tumours.

—R. Olshausen (*Centralbl. f. Gyn.*, Jan. 4., p. 1).

—The most important disputed point is how far preservation of the organs is advisable in operations for fibro-miomata. As regards the ovaries it has long been known that the menopause when induced suddenly and prematurely is generally accompanied by more unpleasant symptoms than when it occurs naturally. The symptoms of the artificially induced menopause are due to absence of the internal secretion of the ovaries, and not to amenorrhœa, since they may appear within a week of oöphorectomy, before the menses are due. Therefore unless technical reasons or disease of the appendages prevent, at least one ovary should be left. Before the writer made this rule he had 3 cases in which after supravaginal amputation of the uterus and removal of both ovaries, which is still the most common operation, climacteric mania appeared. The disadvantage of leaving the ovaries after hysterectomy is that they appear to be then peculiarly liable to cystic degeneration. This occurs most often in the writer's experience, after vaginal hysterectomy for carcinoma, and is possibly due to the application of the uppermost ligature close to the hilus ovarii. Whenever practicable that ovary should be left which is situated farthest from the uterus, and care should be taken to spare the tissues in the neighbourhood of the hilus. Zweifel maintains, however, that hysterectomy has a remote effect on the ovaries, which atrophy within 3 years of

supravaginal amputation, and so indirectly induces the menopause. He, therefore, whenever possible preserves some of the body of the uterus with its mucous membrane, so that menstruation may continue. This operation he prefers to call "re-section of the uterus" rather than supravaginal amputation. With Zweifel's views Olshausen agrees. The uterus is, however, more completely preserved if amputation, which, in Zweifel's modified form is satisfactory only if the tumours are limited to the fundus, is abandoned in favour of enucleation. This operation is probably applicable to about 27 per cent. of all cases. In women under 35 the preservation of the uterus allows of subsequent conception. The sole disadvantage is that small myomata may be overlooked and subsequently enlarge; in one of the writer's cases a second operation became necessary on this account. In older women this is not likely to happen, and the operation is less severe than supravaginal amputation. The writer has removed at one sitting more than 9 myomata. The combined weight of the enucleated tumours frequently ranged from 1 to 2 lb. and in isolated cases from 2 to over 8 lb. (3850 gm.). Even the removal of deeply situated intra-mural fibroids does not cause any solution of continuity of the uterine wall. On the contrary the uterus after all discoverable tumours are enucleated is still deformed and hypertrophied, sometimes to twice the normal size. Within 3 months of the operation, however, it regains its natural size and shape. It is frequently impossible to decide without laparotomy whether enucleation or supravaginal amputation is indicated. As a rule the position of the ovaries, if ascertainable, gives a clue. If they are high up on a level with the tumour and the whole uterus is uniformly enlarged rather than nodular, amputation is alone possible. If they are low probably the tumour is situated in the fundus and may be enucleated. Another point is the length of the uterine cavity. If a sound does not pass more than 4 to 4½ in. enucleation is probably practicable. If this measurement is appreciably exceeded amputation will

probably be required. Owing to the more thorough exploration possible if laparotomy is performed, the writer would greatly limit the indications for vaginal removal of fibroids. In the vaginal method the uterus can be explored satisfactorily only if it can be completely brought out through an incision in the anterior fornix. But this is possible only when the uterus is small, and when, therefore, removal of the tumours is probably unnecessary.

Intra-Nasal Treatment of Dysmenorrhœa.—Alfred Ephraim (*Allgem. Medicin. Central Zeitung*, March 8 and 12, p. 229).—The writer has employed intra-nasal treatment for dysmenorrhœa in 24 cases. Of these patients 7 were married. In all the pain was severe and continuous. In 12 of the cases a physical examination was made; in 7 retroversion or retroflexion of the uterus was found. It was usually caused by inflammatory changes in the parametrium. In the other 5 the genital organs were normal. In half the patients the nasal cavities were quite normal, in 7 there was slight swelling of the mucous membrane, especially over the lower turbinal, and in 5 there were more important changes. In 3 of the last group there was narrowing of the cavity from bulging of the septum and swelling of the turbinals; and in 2 there was chronic atrophic rhinitis. The writer did not observe any of the "menstrual alterations"—the swelling, congestion, and hyperæsthesia of the mucous membrane observed by Mackenzie, Fliess and others.

He applied cocaine to the "genital areas" in the nasal cavities, and in 18 cases the results were remarkable. Women who at the moment of the application were in the greatest pain, were in from 3 to 5 minutes quite relieved, and remained free for several hours. In both cases of atrophic rhinitis (in one of which there was also retroflexion of the uterus) the application of cocaine produced no result. The presence or absence of swelling of the turbinals did not produce any difference in the result. The condition of the sexual organs also did not affect the success of the treatment. In the 6 cases in which the result was negative, 3 of the patients were girls who were not examined gynæcologically, but in whom the genital organs were assumed to be normal; while 2 had displacements of the uterus. One patient had a fixed retroflexed uterus, and suffered from violent dysmenorrhœa. An application of cocaine inside the nose gave instant relief.

An indefinite application of cocaine to the interior of the nose is useless. The drug must be applied to the "genital areas," viz., the tubercle of the septum, and the anterior half of the inferior turbinate bone, on its inner, upper and under surfaces. The application must be sufficient to produce complete anæsthesia of these areas. A 20 per cent. solution of cocaine should be used. The writer does not think that the effect is purely a mental one. The permanent intra-nasal treatment of dysmenorrhœa by cauterising the genital spots is not so successful. Of 8 cases thus treated only 4 were permanently relieved. In 1 of these the relief has lasted more than a year, and in the other 3 more than 6 months.

NOTES.

THE INFLUENCE OF ALTITUDE ON THE BLOOD.—In the *St. Petersburg Medicinische Wochenschrift*, No. 50, 1901, Dr. Pacht gives a critical summary of what is known on this much disputed subject. The question whether with increasing elevation above sea-level the red corpuscles increase in number is of more than academic interest. It is proved that with increasing elevation the number of red corpuscles in a c.mm. of a Thoma-Zeiss counting-cell increases up to a certain point, which is directly proportional to the elevation. This occurs also in animals kept in a rarified atmosphere under a bell-jar, so that the increase appears to depend on diminution of the barometric pressure. Conversely, on descending the number of corpuscles rapidly diminishes. The percentage of hæmoglobin rises and falls with the numerical increase or diminution of corpuscles, but the increase takes place more gradually, so that the normal relation of hæmoglobin to corpuscles is not attained until the organism is thoroughly acclimatised. During the process of acclimatisation the number of leucocytes also increases, and numerous poikilocytes and microcytes appear. Every 100 metres (328 ft. 1 in.) ascended corresponds to an increase of about 100,000 red corpuscles in the c.mm.

According to Miescher and his followers the increase in the numbers of erythrocytes in a c.mm. indicates an increase in the total number

in the body, the new formation compensating for the increased difficulty of absorption of oxygen in a rarified atmosphere. But it is objected that the increase is relative or apparent—relative owing to variations of distribution of the erythrocytes or to inspissation of the blood; apparent, owing to the experimental error of the Thoma-Zeiss instrument. The views of Cohnstein and Zunz on the part played by variations of distribution in the increase of the red blood-corpuscles in a c.mm. have been disproved by Egger, who, working in Arosa, found that, in rabbits, the same increase occurs in the larger blood vessels as in the cutaneous capillaries. The theory, chiefly advocated by Gravit, *Berlin. Klin. Woch.*, Nos. 33 and 34, 1895), that the increase is relative and due to rapid loss of water in a rarified atmosphere, has been widely accepted. On this hypothesis the numerous microcytes which appear on entering high altitudes are erythrocytes which have shrunk from loss of water. Though the phenomena of desiccation observed at high altitudes both in life and after death seem to support this theory experiment has shown it to be untenable. For, Suter and Jaquet (*Corr.-Bl. f. Schweiz. Aerzte*, No. 4, 1898) after keeping rabbits for 4 weeks at Davos and Basle under similar conditions found in the animals kept at Davos not only a greater number of red blood-corpuscles in the unit of space, but also an excess of the total amount of hæmoglobin in the blood, which amounted to more than 23 per cent. Again, if the microcytes

were shrunken erythrocytes their number should steadily increase with advancing concentration of the blood. But they are found only during the early stage of acclimatisation. If inspissation were the sole cause of the hæmic changes the increase of hæmoglobin and erythrocytes should proceed *pari passu*. But the hæmoglobin increases more slowly than the red corpuscles, and at first is relatively deficient. The increased difficulty of the hæmoglobin in the performance of its function is to a certain extent compensated by an increase in the surface area of the hæmoglobin-carrying structures. In proportion as the hæmoglobin increases the microcytes become scanty and give place to normal erythrocytes, until acclimatisation is complete, when the blood shows an increase in the number of red corpuscles and a corresponding rise in the percentage of hæmoglobin.

Probably there are two factors in the numerical increase of red corpuscles in the c.mm.—compensatory new formation and inspissation from increased loss of water through respiration and perspiration. Zunz and Schumburg have observed an increase of 200,000 to 800,000 red corpuscles in the c.mm. in soldiers on the march, and Pacht's observations made on himself show a difference of from 200,000 to 300,000 in the blood during dry and damp weather respectively. Variations in the distribution of blood due to vaso-motor stimuli, and in the atmospheric humidity, probably account for the slight discrepancies in the results of different observers. The first factor corresponds to a real, the second to an apparent increase. The increase due to vaso-motor disturbances is noticeable within a few minutes, that due to a dry atmosphere within a few days, that due to

new formation only after weeks. At moderate altitudes, and in the early days of acclimatisation the apparent increase may exceed the absolute increase; when acclimatisation is complete the apparent increase is but a small part of the whole.

Probably the organism compensates for the diminished tension of oxygen, first by increased rapidity and depth of respiration, then, as the red cells increase in number, by increased "internal" respiration. This accords with the fact that on arrival at a high altitude there may be dyspnœa, though later respiration is not hurried. If this explanation be true it has an important bearing on the treatment of collapse from hæmorrhage. For if the organism compensates for diminished tension of oxygen in the air by an increase of the internal respiratory surface, *i.e.* of the red corpuscles, the diminution of the internal respiratory surface, which occurs in hæmorrhage, might be compensated by increasing the tension of oxygen in the air. That the loss of water must be replaced simultaneously is evident. The symptoms of acute anæmia from hæmorrhage and those observed in persons in balloons at great elevations are practically the same. In the one case they are due to diminution of the oxygen absorbing surface in the blood, in the other to diminution of the tension of oxygen in the air. In both there may be palpitation, dyspnœa, progressive muscular weakness, tinnitus, ocular disturbances, and unconsciousness. The subsequent changes in the composition of the blood are also identical. The red corpuscles increase and poikilocytosis appears. There is an increase of hæmoglobin, which lags behind that of the erythrocytes; in both there is an initial numerical increase in the leucocytes. That normoblasts have hitherto

been found in the blood at high altitudes only by Schaumann and Rosenquist, though constantly present after hæmorrhage, is probably due to the fact that they have not been sought at elevations analogous in their respiratory effect to that of a copious hæmorrhage.

THE DANGERS OF CELLULOID.—The dangerous inflammability of celluloid is once more illustrated. Despite the publication of a series of severe accidents in the last 10 years nothing appears to have been done to render this substance less fiercely inflammable. A commission appointed by the *Lancet*, whose results are published in the issue of March 5th, 1898, has shown, by placing a celluloid comb in a wig at varying distances from a glowing fire, that there is probability of accidents to wearers of celluloid ornaments. Further, it was found that a curling iron heated to the temperature necessary for curling and brought in contact with a celluloid comb or hairpin would readily start the evolution of dense and highly inflammable fumes. The proximity of a naked light adds to the danger enormously, for the fumes of celluloid will ignite fiercely at some considerable distance from the flame. Later, the *Lancet* demonstrated the danger of exposing celluloid toys in shop windows close to electric lamps. Nearly 4 years ago, that journal suggested that the manufacturers of articles for personal wear should be compelled to stamp plainly upon them the words "highly inflammable." In one case a man smoking a cigar was playing an "American organ" with celluloid keys. Some red hot ash dropped upon the keys, and they instantly burst into fumes and flames which were extinguished with difficulty. In the *Lancet* of Feb. 22nd last, Professor Ogston describes the case of a woman who, seated

before a fire which was not unusually strong, found her head enveloped in smoke and flame from the ignition of a comb. Before the flames could be extinguished an area of the scalp 4 by 1½ inches was destroyed. The burn was of the third degree and took many months to heal. The hair of the injured area was totally destroyed.

Another fruitful source of danger is the celluloid collar. The hot ash from a cigarette, cigar, or pipe falling on one sets it in a blaze at once and as it is tightly fastened round the throat its removal is almost impossible before serious injury has been inflicted. In the *Lancet* of May 15th, 1897, the case is recorded of a boy wearing a celluloid collar tied with a string. Having no knife he attempted to remove the collar by burning the string. The collar ignited and lighted drops of the composition fell on his clothing. His throat and face were badly burned.

THE JENNERS AND REVACCINATION.—It is a question how far the Jenners, through ignorance of the proper conduct of vaccination, have supplied their acuter opponents with one of their chief weapons. Henry Jenner, Edward Jenner's nephew, pupil, and fellow-worker, believed so implicitly in the protection afforded by a first inoculation with cow-pox that he scoffed at the idea of repeating the process. He was manifestly of opinion, says Mr. Plarr, librarian of the Royal College of Surgeons, England, in a pamphlet containing biographical details of the long career of this "St. Paul of vaccination," that "once vaccinated," implied "always immune." The opponents of vaccination never tire of pointing out that vaccinated persons have nevertheless contracted small-pox, and it is an unending task to prove to them that vaccination is of little

avail when more than a decade old. Statisticians have, doubtless, unconsciously helped the anti-vaccinationists by employing a loose nosology, according to which 'vaccinated' may mean those inoculated with the cow-pox however inefficiently and however long ago.

Henry Jenner at one time went so far in his contempt for revaccination as to say, "Many are of the absurd opinion, that the efficiency of vaccination will only shield the constitution from small-pox contagion for a certain number of years." His great kinsman had made one of the grand discoveries of all time, but for a long period Henry Jenner's mistake was an obstacle to vaccination, for until revaccination became an established principle the Jennerian doctrines remained on trial. Henry Jenner appears to have exposed his patients to variolous infection. James Phipps, the Jenners' gardener, was the first man vaccinated after the establishment of the practice. "He was, by me," says Henry Jenner, "several times inoculated for small-pox after the first vaccination, but could not be infected with it!" He was not, however, revaccinated for many years. At other times, this fanatic believer in one vaccination "took the vaccinated to visit the sick. His own children, William Henry and his twin daughters, he treated with successive

inoculations of small-pox matter, and subsequently took the boy 'into the room where a young person lay dangerously ill of small-pox.'" Henry Jenner, however, seems to have gone too far at least once. "His greater uncle, Edward, refers to this case with a kind of gloomy candour that should disarm the anti-vaccinationists. Writing to the Rev. Dr. Worthington in February, 1819, he says, "We have at last imported the disease into this place. Henry Jenner, who, though he has seen nearly half a century fly over his head, has not yet begun to *think*, perched himself in the midst of a poor family pent up in a small cottage. It was the abode of wretchedness, had the addition of pestilence been wanting. He was infected, of course; and his recovery is very doubtful. I am told to-day that he is very full of an eruption, the appearance of which stands midway between small-pox and chicken-pox.'" Henry Jenner recovered from this dubious seizure, and the experience may have led him to revise his opinions. Certain it is that in 1839, he performed some 25 revaccinations. The record of these is contained in a manuscript in his handwriting, now in the Library of the Royal College of Surgeons. The name of James Phipps heads the paper. None of the revaccinated therein mentioned had been vaccinated for many years.

LEADING ARTICLES.

LANCET, April 12, p. 1027.

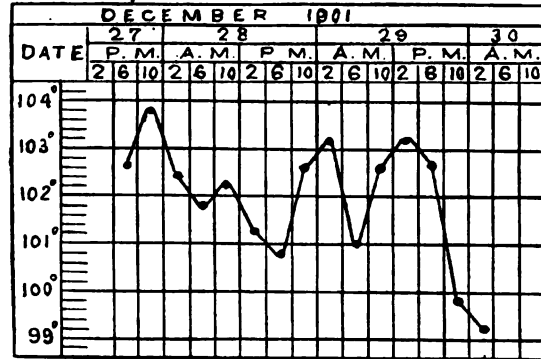
Pneumococcic Gastritis and General Infection.

By ALEXANDER G. R. FOULERTON, F.R.C.S.

The lesions of mucous membranes which may be caused by the pneumococcus have attracted comparatively little attention, partly because their importance has been overshadowed by more conspicuous pneumococcic lesions—such as pneumonia, peritonitis, meningitis, and arthritis—and partly because of some technical difficulty in the isolation of the organism when it occurs in lesions of mucous surfaces, which are frequently so contaminated with other bacteria that the primary agent is difficult of identification. A number of writers has, however, referred more or less casually to various morbid conditions of mucous membranes, such as laryngitis and enteritis in fatal cases of pneumonia. The following case of acute pneumococcic membranous gastritis appears to be the first recorded.

A man, aged 26, was admitted to hospital on Dec. 27. A fortnight previously he had "quinsy," and he had been ill ever since. Three days before admission free epistaxis occurred whilst he was blowing his nose. Since then there had been almost continuous oozing of blood from the nostrils. The day before admission he threw up some dark-coloured matter with a disagreeable smell.

He was very anæmic. The lips were swollen and on the back, around the lips, and on the cheeks were petechiæ. There was coagulated blood in the nostrils, on the lips, and on the gums around the teeth. The breath was very offensive and the tongue was dry and covered with a dark grey fur. The pulse was



frequent, small, and soft. On the 28th the oozing of blood from the nostrils continued. On the 29th he was restless, the respiration was hurried, and the pulse frequent, very small, and of low tension. The temperature began to fall towards the evening, and he died early next morning with signs of urgent dyspnoea. Throughout the illness there was no gastric disturbance.

NECROPSY.—Numerous petechiæ were scattered over the skin; there were several "mulberry spots" on the chin and on the cheeks. There was a deepish, ragged ulcer in the right tonsil, and a large blood-clot occupied the upper part of the pharynx. The stomach contained dark-coloured fluid matter of an offensive, "cheesy" odour. The viscus was lined from end to end with a roughish exudation membrane which towards the cardiac extremity was almost black and was intimately attached to the underlying mucous membrane. Towards the pylorus it was greyish and less closely attached, so that it could be peeled off in small flakes from the mucous membrane, in which were numerous petechial hæmorrhages. The rugæ of the stomach were swollen and prominent. The wall of the stomach as a

whole was slightly thickened but the increase appeared to be due mainly to the membranous formation, which terminated abruptly at the cardiac and pyloric openings. The general appearance of the stomach bore a superficial resemblance to that seen in a severe case of poisoning by a mineral acid. The serous coat was somewhat congested and the peritoneal sac contained a few ounces of slightly turbid fluid. There were small petechiæ on the pulmonary pleuræ, epicardium, and surface of the liver and kidneys. There was an interstitial hæmorrhage, about the size of a shilling, close to the surface of the right lung and a small excess of blood-stained fluid in the pericardial sac.

In the blood of the femoral vein, the mulberry spot, and the hæmorrhagic area in the lung the pneumococcus was found in pure culture. In the gastric exudation the pneumococcus and an organism which appeared to be the bacillus mesentericus vulgatus were found. From the spleen a bacillus corresponding with the last was cultivated. In stained sections through the substance of one of the "mulberry spots" no bacteria could be found. In sections through the coats of the stomach and the overlying false membrane two kinds of bacteria were recognised. There were considerable numbers of bacilli which were probably of the same species as that isolated in culture, and also a number of cocci arranged in isolated pairs and in small colonies which in all respects corresponded with diplococcus pneumoniae as it is seen in animal tissues. Sections showed that the changes in the stomach chiefly affected the glandular structure of the mucous membrane. On the surface was a fibrinous layer of considerable thickness beneath which the glandular layer of the mucous membrane was necrosed, in some places down to the

muscularis mucosæ. Small masses of altered blood pigment were scattered throughout the mucous membrane and quantities of apparently unaltered red blood cells lay both within the lumen of the glands and in the interglandular connective tissue. A notable point was the slight evidence of inflammatory reaction: in the submucous coat there was none, and in the muscular coat there were only a few collections of leucocytes at wide intervals.

Dieulafoy has described *gastrite ulcéreuse pneumococcique*, which is probably a later stage of the condition in the above case. A man, aged 35, was admitted to hospital with a history of pain in the side for 7 days. Pneumonia was diagnosed, but there were also marked abdominal symptoms—pain, diarrhoea, and vomiting. Two days after admission there was severe hæmatemesis, which was followed by melaena, and again by hæmatemesis. After death was found evidence of general pneumococcic infection—pneumonia on the right side, pericarditis, and peritonitis. The pneumococcus was isolated from all these lesions. The mucous membrane of the stomach presented a number of small erosions, of from 2 to 3 mm. in diameter. They were especially numerous near the pylorus, and as many as 10 or 12 could be counted in a square cm.; many had a small blood-clot at their base. There was little or no inflammatory reaction in their neighbourhood. In sections a large number of diplococci could be seen both in the interglandular connective tissue and within the capillaries.

Dieulafoy also refers to another condition of the stomach which occurs in the course of a pneumococcic infection. A man, aged 45, was admitted to hospital with left pneumonia. Subsequently there were symptoms of peritonitis and acute arthritis of the left wrist.

The necropsy showed 3 interlobular abscesses in connexion with the left lung, purulent meningitis, peritonitis, suppurative arthritis of the left radio-carpal joint, and vegetations on one of the aortic valves. The pneumococcus was demonstrated in these lesions. In the mucous membrane of the stomach and in the submucous connective tissue were hæmorrhagic patches. Apparently closely allied in its pathology to the ulceration of the stomach described by Dieulafoy is the case of ulceration of the colon recorded by Rathery and Chauffard. ("REVIEW," Vol. IV., p. 527.)

Pneumococcic lesions of practically every mucous membrane surface have been observed. In addition to causing acute abscess of the tonsil the pneumococcus appears to be a fairly frequent cause of acute membranous tonsillitis and pharyngitis. Bacteriological identification is rendered difficult by the fact that the organism is a frequent parasite of the healthy mouth. Amongst the consequences of pneumococcic pharyngitis is perforation of the pillars of the fauces, as in a case recorded by Munro ("REVIEW," Vol. IV., p. 731). A possible result of pneumococcic pharyngeal infection spreading along the Eustachian tube is otitis media (See "REVIEW," Vol. IV., pp. 40 & 538). The writer has also examined a case of laryngitis, probably pneumococcic, in a man who died with a pneumococcic abscess of the lung. On one of the false vocal cords was a greyish closely adherent membrane. The pneumococcus was isolated in pure culture from the pulmonary lesion, and diplococci resembling it were seen in smear preparations made from the laryngeal membrane. There is a pneumococcic membranous conjunctivitis which sometimes occurs primarily, sometimes in the course of pneumonia. It is probably

not so common as a more localised pneumococcic suppurative keratitis. Out of 50 cases of suppurative keratitis Uhthoff found the pneumococcus in pure culture in 24 and associated with other bacteria in 7.

The pneumococcus does not seem to have been often found by those who have specially studied the bacteriology of the uterus and vagina, whether healthy or diseased. Cohn has recorded a case of pneumococcic endometritis and general infection in a woman, aged 35, who had metrorrhagia 3 months after a miscarriage. (*Münch. Med. Woch.*, 1899, p. 1558.) After death were found suppurative endometritis with retained portions of placenta, ulcerative endocarditis of the aortic valves, suppurative meningitis, and 2 softening infarcts in the spleen. The pneumococcus was present in all the lesions. Of pneumococcic salpingitis there is more evidence: Witte identified the coccus in 4 out of 39 cases examined; Hartman and Morax found it in 2 out of 33 cases. A remarkable case of membranous inflammation of all the mucous surfaces of the body open to inspection has been recorded. ("REVIEW," Vol. IV., p. 651.) These facts show that the pneumococcus produces in mucous membranes generally effects similar to those found in pneumonia—fibrinous exudation, destruction of surface and extravasation of blood.

JOUR. OF OBST. AND GYNÆCOL., April, p. 384.
Suppression of Urine following Labour.

By R. G. MCKERRON, M.A., M.D.

Though marked diminution in the quantity of the urine from the nephritis of pregnancy is not uncommon complete suppression is rare. Bland Sutton has recorded a case in which anuria followed ovariectomy in the ninth month

of gestation, necessitating the induction of labour. Although such result is by no means an infrequent experience of the surgeon in renal and other cases, as an obstetric complication it is extremely rare. So uncommon is suppression of the urine after labour, apart from eclampsia, that no text-book even mentions it, while literature appears to furnish only 3 cases. But recent experience has led the writer to the conclusion that total or partial suppression of urine is not so uncommon a puerperal complication as the records suggest. In the last 3 years 3 cases have come within his knowledge—2 of complete, 1 of partial suppression. Notwithstanding its dangerous nature in only one case was the complication immediately recognised, with the result that valuable time was lost. There was nothing during pregnancy or labour to arouse suspicion, and the practitioner, unaware that an entire suspension of the renal function may follow an apparently normal and easy labour, was lulled into a false sense of security by the absence of characteristic symptoms.

CASE I.—In April, 1897, a primipara, aged 23, in the eighth month of pregnancy had swelling of the ankles and puffiness of the face and hands. The urine was scanty and almost solid with albumen. She was ordered rest in bed, and an exclusively milk diet. The urine increased and contained less albumen; but in a few days labour pains set in, and she was delivered after an easy labour of a 7 months' foetus, which had evidently been dead for over a week. The albuminuria rapidly diminished but did not disappear till 3 weeks after labour.

In the beginning of Sept., 1898, she again became pregnant. In the interval the urine was examined twice or thrice and found free from albumen. In the early months of pregnancy she was remarkably well. The urine was tested at intervals of about a month, but

showed no albumen. On April 17, at 3 a.m., she was seized with a sudden pain in the lower abdomen, which in about an hour abated, but was followed at 5 a.m. by intense nausea and vomiting. There was slight hæmorrhage from the vagina. She was sent to bed, and for the sickness an effervescent saline and a mustard poultice to the epigastrium were ordered. At 2-30 p.m. there had been considerable bleeding, and she complained of pain in the back, and to a less extent in the abdomen; the os uteri admitted a finger readily, but the cervix was not drawn up; the head presented. The hæmorrhage had stopped, and there were no labour pains. Absolute rest in bed and a tight abdominal bandage were ordered. About 8 p.m. a 7½ months' dead foetus was born. The placenta was covered almost in its whole extent with adherent black clots. During the night, there was much sickness; any fluid taken caused vomiting. No urine had been voided. At 1 p.m. catheterism yielded only ½ ounce of urine containing ¼ albumen, blood corpuscles, epithelial casts, and urea, .25 per cent. Late in the afternoon catheterism yielded no urine. The sickness continued. The pulse was but little accelerated and of no great tension. The skin was dry and harsh. A hot fomentation was applied to the renal region. On the third day no urine was passed, but as there was no evidence of retention the catheter was not used. Poultices were applied to the lumbar region, and a diuretic mixture was ordered, but it caused vomiting, as did everything save ice and iced water. On the fourth day she complained of slight headache and aching in the loins. No urine was passed. Poultices were applied and a hot pack ordered. A compound jalap powder was given, but as it was at once rejected an enema was administered. On the fifth day no urine was voided; pulse and temperature were subnormal; the sickness

was somewhat moderated, but apt to be induced by taking any fluid. A pint of warm normal saline solution was injected into the rectum, and a hot pack given. The saline solution in part returned, but a few minutes later she passed $8\frac{1}{2}$ ounces of urine, of s.g. 1010, containing 4 gr. of urea, a trace of albumen, pus, and blood corpuscles. In the evening another injection of saline solution was given and followed by a hot pack, after which she took fluids. In the next few days the renal secretion was gradually established. It contained a trace of albumen for about 6 weeks after labour. The writer can find no other record of prolonged anuria after labour which ended in recovery.

CASE 2.—A woman, aged 42, in the early months of her fourth pregnancy had vomiting and nausea, which passed off towards the end of the fourth month, after which she was in good health. In the previous pregnancies she suffered more severely from these symptoms. The urine then contained no albumin. At the beginning of the seventh month she was suddenly seized with severe pain in the hypogastrium which was followed one morning by a discharge of blood. There were much sickness and retching, and intense, continuous pain over the uterus, which was tender. In the evening she was still very sick. Since the morning she had not passed urine; catheterism showed that the bladder was empty. She was suffering so intensely that a hypodermic injection of $\frac{1}{4}$ grain of morphia was given. At 9 p.m. $\frac{1}{4}$ grain of morphia was injected. She passed a fairly good night, but was weak and unable to retain anything save a few sips of tea. There were occasional attacks of precordial pain. Next morning a teaspoonful of urine was drawn off with the catheter, but it was mixed with vaginal discharge and useless for examination. The

hands and legs became somewhat swollen. Next day at noon labour began, and at 4 p.m. she was delivered of a foetus which had evidently been dead some time. The pain was little, if at all, relieved by the emptying of the uterus. At the beginning of and during labour the temperature was 97° . In the evening she was much easier, but any attempt to eat brought on vomiting and pain. On the second day of the puerperium she was very weak, and unable to take nourishment; the temperature was 99° . The catheter was twice passed but without result. Poultices were applied to the loins; pilocarpine was injected subcutaneously, and later digitaline and strychnine. In the evening she seemed fairly comfortable, though still troubled with sickness. On the third day no urine was obtained. At 10 p.m. she had what the nurse described as a rigor—probably a convulsion. The temperature was 97° and in half-an-hour it fell to 95° . The breathing was laboured and the pupils were contracted. Saline solution was injected into the rectum. During the night she was very restless and had severe precordial pain. She took a few sips of tea, which she retained. At 6 a.m. she gave a loud shriek and cried that she was choking, while her face became contorted. The temperature was 95° , the pulse regular, and of moderate tension. No urine was obtained by the catheter. On the fourth day she gradually became weaker, and died at 3.45 p.m., suffering great precordial pain, and conscious to the last. A necropsy was not allowed.

CASE 3.—A primipara, aged 19, was admitted to hospital within 2 weeks of term. At the beginning of the ninth month she was suddenly seized with nausea and vomiting, severe headache, and pain in the back. During the next 10 days these symptoms frequently recurred. There was no oedema. On catheterism

only $\frac{1}{2}$ ounce of urine was obtained which became almost solid on boiling. The temperature was 100° and pulse 122. There was considerable tenderness in the left loin and over the left side of the uterus. A few hours after admission labour commenced. The first stage lasted 5 hours. About an hour later delivery was completed with forceps under anæsthesia. The child was alive. Soon persistent retching and vomiting began. The pulse and temperature were subnormal, the former fell to 48. No urine was voided in the first 24 hours. On passing the catheter only 4 ounces were obtained, which on boiling deposited one-third albumen. Poultices were applied to the lumbar region every 3 hours, rectal injections of saline solution were ordered every 4 hours, and by the mouth sips of very hot water and milk and potash, amounting to 3 pints in 24 hours, were given. On the third day the temperature never rose above 97° and was occasionally as low as 96° . The pulse was only 44. The vomiting and retching continued, she took 3 pints of milk and potash, and 4 pints of hot water in occasional sips. Only 8 ounces of urine were obtained by catheter, and it contained $\frac{1}{2}$ albumen. Poultices and saline injections were continued. A mixture containing digitalis and strychnine was ordered, and for the vomiting a mustard-leaf was applied to the epigastrium. On the fourth day a free action of the bowels was produced by salts. By catheterism 14 ounces of urine containing $\frac{1}{2}$ albumen were obtained. On the fifth day she was still apathetic and drowsy. The temperature rose in the afternoon to nearly normal and the pulse-rate increased. Vomiting and retching were less severe, and there were taken about 8 pints of fluids—butter-milk, potash and milk, and hot water. 47 ounces of urine containing

$\frac{1}{2}$ albumen were passed. On the tenth day the urine was free from albumen.

The three previously published cases are as follows :

CASE 4.—(McCrea, *Canada Lancet*, 1884, vol. xvi., p. 173.) Labour occurred in eighth month of a third pregnancy. The child was still-born and slightly decomposed. After delivery the patient complained of pain in the lumbar region, and Dover's powder was administered. On the second day she still complained of the pain which was relieved by $\frac{1}{2}$ drachm of tinct. opii in starch enema. As no urine had passed since confinement, digitalis and sp. æth. nit. were ordered. On the third day no urine was secreted; the temperature was 100° , and there was vomiting; pulv. jalap co., 30 gr. were given. On the fourth day the pupils were contracted. On the fifth day the pulse was 120, and the temperature 101° . On the sixth day the temperature was 102° , there were slight clonic spasms, headache, delirium, vomiting, hiccough, and contracted pupils. On the eighth day the breath was fœtid and ammoniacal, and there was free perspiration. The patient gradually became comatose, and died on the eleventh day.

CASE 5.—(J. T. Williams, *Lancet*, 1886, ii, p. 248.) A primipara, aged 22, had a very rapid labour. The child was still-born, apparently at term. In the evening she was comfortable and to all appearances doing well. But she had vomited several times since labour, and had passed no urine; there was no pain or distension of the bladder. Hot fomentations were applied over the hypogastrium, and soda-water and diluents ordered. Next day no urine had been voided, and only 3 drops were obtained by the catheter. She vomited twice or thrice. Hot fomentations to the loins, digitalis and nitre, 1 drachm of pulv. jalap co., soda-water, and diluents were ordered. On

the third day she had passed about 4 drops of urine, and catheterism yielded $\frac{1}{2}$ ounce, containing $\frac{1}{8}$ albumen. Next day $1\frac{1}{2}$ ounces containing blood, hyaline casts, a large quantity of spheroidal epithelial cells like renal epithelium, and $\frac{1}{8}$ albumen were obtained. Death occurred suddenly without convulsions on the fifth day.

CASE 6.—(F. F. Bond, *Lancet*, 1889, ii., p. 431.) A third pregnancy terminated in the seventh month by the delivery of a still-born child. Next day there was vomiting. No urine had been passed. On the third day catheterism yielded only a few drops of urine. In the evening there was intense pain over the loins. Hot fomentations to the loins, a strong calomel and jalap purge, a morphia and belladonna suppository, and an effervescing diuretic were ordered. On the fourth day the pain in the loins was intense and the anuria persisted. A Simpson's bath and vin. antimonialis, 10 m. and tinct. jaborandi, 30 m., every 3 hours, were ordered. In the evening she was much easier and perspiring freely, but there was no urine. On the seventh day the vomiting and retching returned and she was very restless; the temperature was subnormal. On the tenth day she was very drowsy and occasionally delirious. The breath smelt of urine. Convulsions set in at 2 p.m., and death occurred at 6 p.m.

AGE.—The age is noted in 5 of the cases, and with one exception the patients were under 30. In the case in which the age is not stated it may be inferred from the number of pregnancies that the woman was young. Assuming her age was 30, the average age is 26, at which it is unlikely that the patients had chronic Bright's disease, which is further excluded by the condition of the urine during pregnancy, and by the subsequent history.

PUERPERAL HISTORY. — Two of the patients were young primiparæ, two were pregnant for the second time, one for the third, and one for the fourth. The history of the earlier pregnancies discloses several important facts. In all the 4 multiparæ there were indications of renal inadequacy. In Case 1 the first pregnancy terminated prematurely in the birth of a macerated fœtus. The urine a few days before the labour was nearly solid with albumen. In Case 2 the first pregnancy was accompanied with great sickness and prostration; while the 2 following pregnancies during which the woman suffered even more acutely, terminated at the sixth month in the birth of dead children. In Cases 4 and 6 the second child was still-born at the eighth month, in Case 6 at the seventh month.

HISTORY OF PRESENT PREGNANCY.—In only 2 cases were there symptoms so severe as to induce the patient to seek medical advice. In Case 3—of partial suppression—the woman continued in excellent health till the beginning of the ninth month, when she was suddenly seized with sickness and vomiting accompanied by severe headache and pain in the back. The urine a few hours before labour was almost solid with albumen. The writer's is the only case in which the urine was examined during pregnancy. No symptoms were present, the woman expressing herself as in very good health, and the urine, tested on several occasions, was always found free from albumen. In only one case did the pregnancy continue to term, and then the child was still-born. In 3 cases labour came on at the seventh month, in one at the eighth, and in the case of partial suppression 2 weeks before term. In 4 of the cases of total suppression the labour was unusually rapid.

POST-PARTUM SYMPTOMS.—It is well-known that total suppression of urine may exist for several days without any urgent symptom. This was strikingly illustrated in almost all the writer's cases. As a rule the woman expressed herself as comfortable and well. Pain in the back and headache, but not severe, were present in all cases save one, in which there was severe abdominal and precordial pain. The most uniform and striking symptom was vomiting. In 2 cases there was well-marked depression of the pulse and temperature. In the fatal cases the later symptoms were those that usually precede a fatal issue in suppression of urine—vomiting, drowsiness passing into coma, muscular twitching, and myosis. In 2 cases there were convulsions towards the close.

URINE.—In only one of the fatal cases was any urine obtained. Half-an-ounce was drawn off by catheter on the third day; it was pale and clear, and contained $\frac{1}{3}$ albumen. On the fourth day $1\frac{1}{2}$ ounces were obtained, with a s.g. of 1020, and containing blood, hyaline casts and a 'large quantity of spheroidal cells like renal epithelium.' About 2 hours before death, which took place suddenly and unexpectedly on the fifth day, 1 ounce was spontaneously passed. Of the two cases which ended in recovery, in the first only $30\frac{1}{2}$ ounces of urine were secreted during the first 8 days. Save $\frac{1}{2}$ ounce obtained by the catheter on the day following labour, which was probably in the bladder during it, no urine was obtained till the fourth day, when $8\frac{1}{2}$ ounces were passed after a saline injection into the rectum. This contained only 0.01 per cent. of urea, a trace of albumen, and a few blood corpuscles. On the following day 4 ounces were passed of s.g. 1016 containing urea, 0.6 per cent.; albumen, 0.15 per cent.; and a few blood cells. On the next three days $5\frac{1}{2}$, 12, and 49

ounces were passed respectively, with an increase in the urea percentage and a diminution in the albumen. After this there was well-marked polyuria. Convalescence was slow, and the albuminuria did not entirely disappear for 6 weeks. In the second successful case the urine was solid with albumen a few hours before labour. During the first 24 hours after its completion none was voided, and with the catheter only 4 oz., containing $\frac{1}{3}$ albumen, were obtained; on the following days there were 8 oz. with $\frac{1}{3}$ albumen, 14 oz. with $\frac{1}{4}$ albumen, 47 oz., and thereafter polyuria.

In all the cases of complete suppression, except, perhaps, Case 2, the symptoms conform to those usually ascribed to obstructive suppression, the anuria lasting from 5 to 11 days, and being unattended at first with urgent symptoms. There was evidently toxæmia from nephritis similar to that which is now believed to produce eclampsia. That renal inadequacy existed before the last pregnancy is suggested by the puerperal history. Though the nephritis of pregnancy is common complete suppression of the urine after labour is very rare. Even in the most serious cases of nephritis which result in eclampsia the activity of the kidneys usually is rapidly restored after the uterus has been emptied, and complete suppression is rare. In not one of the present cases did convulsions precede suppression.

The treatment of suppression of urine after labour is that of the condition apart from pregnancy. Efforts to restore the function of the kidneys and to increase the activity of the accessory channels of excretion should be made without delay. In almost all the cases much valuable time was lost through failure to realise the gravity of the condition. The injection of saline solution into the rectum proved

the most effective remedy in Case 1 (See "Saline Enemata in Puerperal Eclampsia," "REVIEW," Vol. IV., p. 244).

ARCHIVES DE MÉDECINE DES ENFANTS,

Jan. and Feb.

Arthritis in Children.

By Dr. J. COMBY.

The writer, who has made an important study of this subject, points out the following manifestations of what he terms "infantile arthritis." The external configuration of the child of a gouty stock is not always apparent. He is often intellectual, in fact precocious; his physique may be unusually good. He is active in movements and restless, and may be irritable and even unruly. His skin is often fine, white, and clear, and the subcutaneous veins are well marked. He sweats easily and profusely. The cases may be divided into two groups—one in which the patients are of the fat and fleshy type, the other of the thin, lymphatic, and nervous. The complexion in the former varies considerably. The children of gouty stock often manifest the lymphatic temperament: the skin is white, the flesh is pale, and the lymphatic glands are well marked; in short, the lymphoid tissue is in excess and readily proliferates. The writer has noticed even temporary attacks of enlargement of the lymph glands. In such children the throat is very sensitive and they often suffer from rhino-pharyngitis and tonsillitis. They easily take cold and slight catarrhal affections may be followed by enlargement of the glands. Anæmia is very common. In addition to the pallor of the skin and mucous membranes hæmic murmurs may be detected

at the base of the heart and over the vessels of the neck. Anæmia may be observed even in the early months of life notwithstanding perfect nutrition, and may continue until after weaning. The writer quotes a case of a girl aged 6½ whose mother was very stout and father migrainous, and whose grandparents were gouty. Every year for 4 years she had periodic anæmia during the whole of Jan. She became pale, listless, melancholy, and sleepy, and lost appetite and energy. This condition suddenly passed off and colour and energy returned. In girls of this type chlorosis may be observed during adolescence.

CIRCULATORY SYSTEM.—Arthritic children are very subject to circulatory disorders. The least nervous disturbance may cause striking vasomotor derangement, such as pallor and blushing. The pulse may suddenly rise from 70-80 to 120-150. There is occasional bradycardia and the pulse may shew irregularities of time and rhythm. The writer quotes a case in which a gouty child had a pulse of 42 with some intermittence. He suffered considerably from headache and nocturnal enuresis. Tachycardia may be paroxysmal and accompanied by violent palpitation and dyspnœa. This latter condition suggests cardiac hypertrophy and is usually noticed during puberty. Children with this hypertrophy of adolescence belong to the neuro-arthritic type. In addition to arrhythmia there may be blowing murmurs both at the base and apex. Neuro-arthritic children are emotional, irritable, and liable to giddiness and even syncope. Such cardiac lesions are purely functional and do not seem to depend on any lesion of the heart, myocardial or endocardial.

RESPIRATORY SYSTEM.—All parts of the respiratory apparatus may be involved. As

already stated, children of gouty descent easily take cold; if exposed to sudden change of temperature spasmodic coryza may result and occasionally take the form of recurrent nasal asthma which may be so marked as to produce hæmorrhage. In fact such children are liable to epistaxis, especially at the approach of puberty; it is more common in summer than in winter, in spring than in autumn. (See also "Epistaxis in Children from Rheumatism," "REVIEW," p. 289.) Laryngismus stridulus is frequently observed in neuro-arthritic children and may follow any slight chill. In such patients large tonsils and adenoids are usually present. Bronchitis characterised by obstinate hacking cough is common and there is frequently an asthmatic or spasmodic element. Attacks of this kind usually occur twice or thrice yearly, and may be accompanied by slight pyrexia. Sometimes the patients develop true asthma. A gouty element should be suspected in all cases of asthma which occur in the young without obvious cause. The amount of physical signs in these cases is remarkable, and the adventitious sounds may be heard at considerable distance from the patient. The writer draws attention to the curious alternation of urticarial or eczematous eruptions with these crises of dyspnœa. Occasionally an attack of asthma seems to take the place of one of obstinate recurrent eczema. Finally, acute pulmonary congestion may appear spontaneously or as the result of chill, fatigue, or other cause. It disappears with similar rapidity. Pulmonary congestion may be accompanied by marked pleural complications such as pain, dry pleurisy, or pleural effusion.

DIGESTIVE SYSTEM.—Digestive troubles are very characteristic of hereditary arthritis. Many children suffer from anorexia and

manifest peculiar tastes for undesirable kinds of food. One child may evince a special desire for meat but will not take bread, vegetables, or farinaceous foods. Pica geophagia and other perversions of appetite are considered by the writer to be more frequent in arthritic children than in others. The tongue is sometimes coated and the breath foetid and such patients suffer from frequent attacks of pharyngitis and tonsillitis. All varieties of dyspepsia occur especially the atonic and flatulent forms; colic is very prevalent, while febrile gastritis is of frequent occurrence. Constipation is the rule and is usually obstinate. It predisposes to mucous enteritis and other similar intestinal disorders. Mucous enteritis may occur at a very early age. In one case the symptoms appeared at 18 months although the child was breast-fed. There seems also a predisposition to appendicitis. "Digestion fever" may occur every 2 or 3 months. The temperature rises slightly every evening. There is nausea and even prostration but no vomiting. The patient sweats at night and there is every appearance of considerable constitutional disturbance. The symptoms subside in 2 or 3 days. Cyclic vomiting is also a symptom of this constitutional tendency. A child previously healthy has a sudden attack of vomiting which recurs at short intervals for 3 or 4 days or longer. Everything, both liquid and solid, is rejected and there is aversion to all food. Constipation is the rule. There may be pyrexia, headache, and restlessness, and there are always great prostration and rapid loss of weight. Meningitis at once suggests itself, but the vomiting ceases as suddenly as it appeared and in 2 or 3 days the patient is quite well. After some weeks or longer the symptoms recur. In diagnosing cyclic vomiting it is important to bear in mind the absence of

apparent cause, the periodic recurrence and the family history. Prognosis is generally good though fatal cases are recorded. Acetone and albumen may occur in the urine, and at times uric acid is in excess ; indican is sometimes found. The only treatment necessary is rest in bed and low diet. No solid food should be given and not even milk. Plain or aerated water is the best drink. Should the child vomit this, enemata of boiled water containing a little salt should be given, and in grave cases a subcutaneous injection of saline solution.

GENITO-URINARY SYSTEM.—Sometimes the urine is of high s.g., 1028 to 1030, but it does not contain sugar. The acidity is marked and urea is abundant. There may be albuminuria but it seems to be temporary, constituting one of the forms of intermittent or functional albuminuria. It may occur only during the day, or after a meal or long walk ; sometimes it is only present in the morning. It is never accompanied by oedema of the face or other part. Some pallor and general feebleness and anæmia may be the extent of the symptoms. Country air or residence at the seaside or some elevated position is the best treatment. In one case there was marked lipuria, with a high degree of acidity and excess of uric acid. Glycosuria does not seem to be a frequent manifestation. Functional disturbances of the urinary passages are frequent. They are polyuria, vesical spasm, and nocturnal and diurnal enuresis. The treatment is to reduce the urinary acidity by diminishing nitrogenous articles of diet and enjoining plenty of plain water as a beverage. Simple cystitis and urethritis even to the extent of purulent discharge occasionally occur. Renal, and subsequently, vesical calculus, are manifestations of the inherited gouty diathesis.

Movable kidney is more frequent in arthritic families than in others, and it may also occur in several members of a family. Dysmenorrhœa and menorrhagia have long been recognised as characteristic of a gouty tendency.

NERVOUS SYSTEM.—Functional disorders of the nervous system are very frequent. The patients are restless, sleep badly, and suffer from night terrors. Insomnia may be constant and begin in the first few months of life. It may cause considerable suffering, as it engenders marked restlessness. Some children suffer from eclamptic seizures, which may occur in those with every appearance of health. The tendency to convulsions subsides as the child grows older, possibly to be succeeded by some other manifestation such as night terrors. If children of an arthritic tendency are liable to convulsions without apparent cause, naturally they are the more liable when attacked by some acute disease such as measles, pneumonia, scarlet fever, etc. Migraine is likewise very prevalent. Spasmus nutans, facial spasm, and other similar neuroses have been noticed ; pseudo-neuralgia, sciatica and torticollis may be added. Headache is so varied, persistent, and inveterate, that a whole article might well be devoted to it. In some cases it merits the term *cephalalgia fulgurans*, coming on with extreme suddenness, sometimes disappearing as rapidly ; in other cases it lasts for days. In cases of such severe headache a form of neurasthenia sometimes develops. Headache of this kind has already been described by Blache under the name of *cephalalgia de croissance*. But growth has little to do with the condition which is purely lithæmic, as a careful study of the patient's antecedents and urine will show. A vegetarian diet, alkalies, friction of the skin, and physical and mental rest are indicated.

THE SKIN.—Arthritic children generally have a fine, thin, irritable skin. Under the influence of heat, and, especially, of wind and cold, their cheeks become deeply coloured, and the skin tends to crack and become rough. They present vaso-motor phenomena under the excitation of physical or mental causes. Emotion, cold, or heat causes them to blush or become pale. They are very liable to chilblains. In summer abundant perspiration is characteristic, and miliaria, sudamina, and dysidrosis, as well as different forms of erythema frequently occur. Urticaria, whatever be the immediate cause is often an arthritic manifestation, and it is curious how frequently it occurs in gouty families. A somewhat rarer manifestation is acute œdema of the eyelids—a form of angio-neurotic œdema which comes on suddenly and without apparent cause, sometimes periodically every few months. It generally lasts from 24 to 36 hours. It is comparable to gouty conjunctivitis and iritis. The term arthritic œdema of the eyelids has been suggested (See also "REVIEW," Vol. IV., p. 94). Seborrhœa, keratosis pilaris, xerodermia, psoriasis, and acne punctata are equally frequent in children of gouty descent. The most common lesion of the skin, however, is gouty eczema in breast-fed children. It is seen in well-nourished children who are properly fed. It occurs during the earlier months of life, affects the face and head, and is most refractory to treatment; sometimes it disappears as suddenly at the end of some months or years. It is explicable only as a gouty manifestation. The rule is for such children to manifest after the eczema has disappeared other evidence of gout, particularly asthma and migraine. Sometimes a change of air is sufficient to cure the eczema. The writer thinks that asthma is liable to replace the eczema on the sudden disappearance of

the latter. This form of eczema is not very moist nor is there much formation of crusts, but it is very pruriginous and there are generally signs of scratching. Local infection may be caused and an impetiginous element thus added. Such an eczema may spread from the face to the neck, chest, shoulders, back, and arms; more rarely the abdomen, thighs, or legs are involved. The patches are generally symmetrical, and are most marked around orifices—mouth, nostrils, eyes, ears, anus and vulva. Its duration is most variable, lasting in some cases from a few months to several years. There is marked tendency to recurrence. Grave internal complications are noted. The writer quotes a case of a child who succumbed to diarrhœa and pulmonary congestion as the result of the rapid disappearance of a generalised arthritic eczema. The treatment must depend on the diathetic element. Local applications are liable to fail unless this point be borne in mind. Change of air, careful attention to diet, and intestinal elimination are of the utmost importance. Alkalies should be given. Baths are not advisable, but mild and soothing antiseptic applications such as oxide of zinc, bismuth, and ichthyol are useful.

LOCOMOTOR SYSTEM.—Arthritic children may present articular manifestations independent of any acute rheumatic condition. These are sub-acute or chronic. Some of the joints may creak and stiffness may be followed by ankylosis and non-inflammatory swellings. To these may be added myalgia, ostealgia, and growing pains. All these pseudo-rheumatic or rheumatoid manifestations are usually apyretic. They resemble gout rather than rheumatism. But typical attacks of acute gout may occur in children.

PATHOLOGY.—The pathogenesis of these affections is by no means clear. It has been suggested that most of the children suffering from symptoms enumerated are dyspeptic. On the other hand, some of the most typical gouty manifestations in children occur in those who have no dyspeptic symptom. Hereditary arthritism is now recognised as explanatory of pallor, anæmia, general debility, palpitation, and cardiac arrhythmia. A high degree of urinary acidity and density, a large amount of urea and uric acid, oxaluria, and occasional slight albuminuria are in support of the lithæmic factor.

TREATMENT is mainly prophylactic. Such children should lead a free open-air life and take plenty of exercise. They should be abstemious in food and drink. No meat should be given during the first 3 years of life, and no alcohol in any form. Even after childhood, meat, especially the heavier forms, should be avoided. Highly seasoned dishes are also inadvisable. Vegetarianism should characterise the diet, and water is the best drink. The skin should be kept in order by frequent ablution, friction, and massage. A general course of alkalis and intestinal antiseptics is beneficial.

DEUTSCHES ARCHIV. f. KLIN. MED.,
Dec., 1901, p. 1.
Chloroma.

By W. ROSENBLATH and W. RISEL.

CASE 1.—A boy, aged 15, was brought to hospital. He had for a month or two felt ill and lost flesh. At times there had been pain in the right hip, which had recently increased, and was worse when he was in bed. For 14 days the right eye had protruded.

He was pale, badly nourished, and apathetic. The right eyeball appeared prominent. The conjunctival veins were dilated, the pupils reacted normally, and the visual fields and acuity were not much altered. There was no headache or giddiness. Small glands could be felt on both sides of the neck. There were tenderness over the right sciatic foramen and painful points in the course of the sciatic nerve. Movements of the leg were free but elevation of the extended limb was painful, as in true sciatica. A fortnight after admission a number of subcutaneous hæmorrhages, some of which were as big as a shilling, developed over the right buttock and on each leg. The liver was of normal size but the spleen was somewhat enlarged. The right eyeball was so prominent that the lids could not be closed. There were great chemosis and optic neuritis. Between the eyeball and the orbital roof a deep seated firm band could be felt. There was violent headache and pain in the right eye. The apathy and weakness increased. The right eye became blind and was enucleated. There was considerable hæmorrhage, and the back of the orbit was filled by a firm tumour. Fourteen days later there was severe epistaxis, which left the patient very pale. There was great bleeding round the left lachrymal papilla which was much engorged and adherent. There was left facial paralysis. The lymphatic glands, liver, and spleen were unchanged. A few days later the patient died. During the illness there were occasional slight rises of temperature, but never above 101°. The blood at the beginning of the illness was normal, but towards the end, after the hæmorrhages, marked leukæmia set in, and 5 days before death there were 300,000 leucocytes and 1,000,000 erythrocytes per c. mm. Lymphocytes and polymorphic neutrophile leucocytes were

scanty ; most of the leucocytes were mononuclear and of varying size. There were many poikilocytes.

NECROPSY.—On opening the vertebral column there was found among the deep muscles of the loins and back a tough green new growth, which extended along the inter-vertebral foramina towards the spinal canal. A similar mass lay between the dura mater and the upper lumbar vertebræ. Brain and cord were pale but normal. The right orbit was almost filled by an ovoid smooth tumour, slightly attached to the bones and firmly adherent to the posterior surface of the lids. On the under surface of the middle lobe of the right lung was a smooth greenish lump. The spleen was slightly enlarged. The mesenteric glands were considerably swollen ; the larger ones were soft in the centre. In front of the lower dorsal vertebræ was a greenish tumour 10 cm. long and 1 cm. broad and adherent to the periosteum. A similar tumour lay to the left of the lumbar vertebræ, and extended into the true pelvis. It was firmly adherent to the sacrum. The marrow of the humerus was greenish and purulent, and contained granular marrow cells with fairly numerous nucleated blood plates, and but few nucleated red cells. Risel found that the tumour consisted of a small-meshed network of connective tissue filled with round cells, the nuclei of which were as a rule as large as a red-blood corpuscle and showed a distinct framework of granular chromative threads, surrounded by a small quantity of protoplasm.

CASE 2.—A boy, aged 8, of healthy parentage and good personal history, fell on the ice and hurt his head. For 8 days afterwards he attended school. Then the schoolmaster noticed that the eyeballs were growing prominent and that the child was becoming

apathetic. When seen 10 days after the accident he was pale and had marked double exophthalmos. There was no pulsation above the eyeballs, but on each side between the eye and the orbital ridge a long horizontal growth could be felt. The conjunctivæ were red but not very œdematous, and the corneæ were slightly opaque. At the angles of the jaw were hard masses of glands, and in the neck on either side and axillæ were little isolated enlarged glands. The inguinal glands were only slightly swollen. On the buttocks, shoulders, arms, back of the hands, and thighs were numerous petechiæ. The bones were not sensitive to pressure. There were 3,700,000 red and 40,000 white corpuscles per c.mm.

The exophthalmos increased and numerous small pale papules developed on the buttocks and lower limbs producing the appearance of *cutis anserina*. The enlarged glands further increased. The hard palate bulged into the mouth and nasal breathing was obstructed. Later the lids and eyeballs were taken up by the tumour masses growing out from the orbits, on the anterior surface of which the corneæ could still be made out. The eyebrows also bulged forward. (Fig.) The number of petechiæ increased, and the bones of the leg and thigh became tender. Epistaxis was frequent, and the blood-count gave 2,300,000 red and 37,000 white corpuscles. Three months after the fall death occurred from a severe attack of epistaxis. The blood was frequently examined, and the elements corresponded with those of Case 1 except that there were not so many large mononuclear leucocytes.

NECROPSY.—In both orbits was a huge firm tumour firmly attached to the lids, but only slightly adherent to the bones. At the anterior end of the left tumour the eyeball



could still be recognised, and on section a cavity bounded by the sclerotic and choroid could be distinguished. The tumour was firm, and pale yellowish green. The naso-pharynx, especially on the left side, was occupied by a similar mass. Cervical, bronchial, and tracheal glands were enlarged, and on section were greenish. Two of them showed caseation. On the inner surface of the manubrium and at the junction of the second and third ribs was a smooth circumscribed tumour, firmly adherent to the bone. In the middle of the upper lobe of the left lung was a small tumour with a caseous centre. The mesenteric glands were swollen, and on section of a pale greenish colour. On the anterior aspect of the lower

dorsal vertebræ, and along the lumbar vertebræ was a greenish tumour firmly attached to the periosteum. The lower part of the shaft of the right femur was almost surrounded by a similar growth. The marrow was red, rather soft, and contained a preponderance of mononuclear marrow-cells of medium size and a few giant cells. Nucleated red corpuscles were almost absent. On microscopic examination the tumour presented the same appearances as in Case 1, but there were numerous spindle-cells along the strands of connective tissue.

By chloroma is understood a tumour of a grass-green, yellow, or grey-green colour, usually of firm, but sometimes of soft con-

sistence. As a rule it develops on the head, usually from the periosteum of the skull. Most often it develops in the cavity of the eye or nose. It may, as in Chiari's case, develop in the antrum of Highmore. It does not appear to have any other seat of election, though it may develop on the sternum or vertebrae. The cervical glands are sometimes though not always enlarged; the bronchial and mesenteric glands are almost invariably enlarged. In several cases the spleen is enlarged. The liver is usually free, but often little masses of tumour are found in the lungs. The condition of the marrow is important. It may be dark reddish, yellowish green, or grass green. Recklinghausen saw pea-green clumps in the marrow of the long bones, especially in the upper part of the femur. Some hold that the tumour arises from the periosteum, others that it springs from the lymphatic system. Virchow regards chloroma as a kind of sarcoma, others hold it is a lymphoma. The green colour of the tumour which may be observed during life is held by some to be due to hæmatogen, by others to a fatty pigment, and by others to be of bacterial origin. As a rule the disease occurs in the first, second, or third decade of life. In Huber's 7 cases the oldest patient was 24. Paviot has seen it in a child in its first year, Waldstein in a patient of 44, and Lang in a man of 52. Males are most often affected. The disease usually produces general symptoms, of which dulness and apathy, pallor, and palpitation of the heart are the most frequent. Soon the tumour becomes apparent. Its usual site is on the bones of the head, most frequently in the orbital cavity. Double or single exophthalmos is therefore one of the most important symptoms, and it is usually accompanied by violent pain. In many cases the tumour is then palpable in the depths of the orbit. The organs of hearing are

often affected. Körner has described tinnitus and deafness in 10 cases. Frequently the tumour grows in the nasal cavity, producing difficulty in breathing and frequent severe epistaxis. The brain and its nerves are not often affected. Headache and giddiness are often present. Apathy and somnolence are common, though the sensorium may remain unaffected till death. Behring has met with apoplectiform seizures. Paralysis of cranial nerves is, with the exception of the optic nerve, not frequent. Green pigment may be found in the kidneys and the urinary passages, and in Waldstein's case the urine was yellowish green.

Purpura and hæmorrhages from the mucous membranes frequently occur. The condition of the blood closely resembles that of leukæmia. Rosenblath compares the blood condition in his cases of chloroma with that in a female patient of 24 with acute leukæmia. He believes that the retinitis in his first case of chloroma was of leukæmic origin.

The course of the disease is rapid and ends in death in about 4 months. Fever may occur, but as in most cases of tumours it is slight. In cases of head-injury, the diagnosis may be rendered difficult by the question of aneurysm, but if there is no pulsation of the protruding eyeball, no *bruit* at the vertex, and no symptom of fracture of the base of the skull it may be excluded.

Confusion with Basedow's disease may occur, but the course shows the diagnosis. When chloroma is suspected stained cover-glass preparations of the blood should be examined. If there is a marked increase of mononuclear lymphocytes, and tumours such as have been described occur in any region of the body, the diagnosis of chloroma is established.

See also "REVIEW," p. 205.

MÜNCH. MED. WOCH., March 25, p. 476.
**Nephrotomy in Acute Pyelonephritis
 with Miliary Abscesses.**

By Dr. WILMS.

Renal surgery has lately shown conservative tendencies. Whenever possible a part or the whole of the diseased kidney is preserved. This rule applies to cases of hydro- and pyonephrosis, tuberculosis, and renal tumours. Even if the process has advanced to the formation of acute miliary abscesses nephrotomy may with advantage in certain cases replace nephrectomy.

A woman, aged 23, who had a vaginal discharge, was suddenly seized with strangury on April 13. Three days later the temperature rose abruptly and there was severe pain in the right loin. After 3 days she was admitted to hospital. The abdomen was distended and tender on the right side. The temperature was 103·6°, the pulse 130. The urine contained some albumen, a few casts, and on standing deposited a thick layer of pus. The right kidney was greatly enlarged. Urethritis, cystitis, and ascending pyelonephritis were diagnosed. As no improvement followed the administration of urotropine and diluents nephrotomy was performed 3 days after admission. A number of small, whitish, abscesses of the size of a pea could be seen through the distended renal capsule. In order to minimise hæmorrhage, instead of the usual free incision bisecting the kidney, a small opening was made in the centre with a knife, and through this the parenchyma was opened up towards either pole with the finger and a blunt instrument. The inflamed tissue was friable and offered little resistance. The pelvis was then opened with scissors. In the substance of the kidney were areas of white striation corresponding to the course of the

purulent infection. The renal pelvis was dilated and contained turbid urine. All the abscesses visible on the surface were incised, a few were lightly scraped, the renal pelvis was drained, the divided kidney was lightly plugged with gauze and the end brought out through the wound. Recovery was rapid. On the first day after the operation 31½ oz. of urine were passed *per vias naturales*, on the second 42 oz., and almost as much escaped by the fistula. It contained some pus and blood. The temperature fell, but on the third day it rose to 102·2° owing to an attack of parotitis; on the fifteenth day it became normal. The plug was gradually withdrawn, the last strip of gauze being removed 3 weeks after the operation. Five weeks after the operation the patient got up, and 3 weeks later the urinary fistula closed. The urine was clear, and contained no albumen, though scattered leucocytes were present. One year later the patient was in robust health. The pus contained pure cultures of the *B. coli communis*.

It was impossible to determine whether the infective process had attacked the other kidney, in which case nephrectomy would have been extremely dangerous. The result showed that nephrotomy was wisely chosen, though the published cases of pyelonephritis with miliary abscesses in which this treatment succeeded are few. Lennander (*Nordiskt Med. Arkiv* Aft. 1, Kirurgi, April 20, 1901) performed nephrotomy with resection of the most diseased parts in 5 cases with 4 recoveries. Israel (*Mitttheil. aus d. Grenzgeb. d. Med. u. Chir.*, Bd. v., 1899), divided the left kidney, which contained numerous miliary abscesses, in a man, aged 61, who had had anuria for 2 days, and whose right kidney had been previously removed for tuberculosis. Twenty-four hours after the operation secretion was re-established, and recovery followed. Both

Schede and Gerster have performed double nephrotomy for miliary renal abscesses with a favourable result. Lilienthal incised one kidney, and 3 weeks later the other for pyæmic abscesses. The patient, who had an alveolar abscess which was followed by erysipelas and pyæmia, recovered. The prognosis probably depends largely on the nature of the infection. Most cases in which the pathogenic microbe is exclusively the *B. coli* have ended in recovery, but only one due to a mixed infection with the streptococcus has done so. However, the cases are too few for general conclusions. Gerster's and Lilienthal's cases prove that nephrotomy may be as successful in embolic miliary abscesses as in those due to extension. In suppurative nephritis the inelastic fibrous capsule is distended by inflammatory exudation. The renal circulation is, therefore, impeded, and the conditions are most unfavourable for recovery. If there is also ureteral obstruction the prognosis is still worse. Nephrotomy immediately diminishes tension and circulation improves. That the good results are not entirely due to the evacuation of the abscesses is proved by the observation of Israel and Lennander that in non-suppurative nephritis incision of the kidney stimulates excretion and may remove anuria.

WIEN. KLIN. WOCH., Feb. 20, p. 198.

Thiosinamin in the Treatment of Traumatic Strictures of the Œsophagus.

By Dr. LUDWIG TELEKY.

The treatment of cicatricial strictures of the Œsophagus is unsatisfactory. According to Hacker's statistics 55 per cent. of the cases treated exclusively by gradual dilatation with bougies, and 40 per cent.

of those treated surgically (mostly by gastrostomy) are fatal. If dilatation fails it is usually best to perform gastrostomy without delay. Further attempts to dilate the stricture may be made later, and, if possible, a permanent Œsophageal tube may be introduced. Hacker's statistics probably are too favourable, for in some of the cases counted as cured or improved there were no doubt relapses. The most common cause of death is perforation. Even when dilatation appears to be proceeding satisfactorily progress may at any time be suddenly and definitely arrested. In suitable cases benefit may then be derived from hypodermic injections of thiosinamin (allylsulphocarbamide)—a drug introduced by Hans von Hebra in 1892 for the treatment of lupus and other skin diseases. It has a specific action on all inflamed parts and inflammatory products, on the one hand aggravating pre-existing inflammation, and on the other rendering cicatricial tissue soft and pliant.

CASE 1.—A woman had drunk a solution of caustic potash at the age of 6. On Jan. 17, 1899, at the age of 31, she could eat soft food, though slowly; if she attempted to swallow meat it was frequently arrested in the stricture. Nothing larger than a fine catgut bougie could be passed. In July, 1899, a number 16 bougie, 9½ mm. in diameter, passed the stricture. In Jan., 1900, no further progress had been made, and all attempts to pass bougies were abandoned. Between Feb. 23 and March 7 10 injections of a half to a whole hypodermic syringe of a 15 per cent. alcoholic solution of thiosinamin were given between the scapulæ. On March 21, 1900, mechanical dilatation was recommenced, and on March 31 a no. 22 bougie, 12½ mm. in diameter, was introduced with ease. All kinds of food could be swallowed. No further

treatment was employed, and up to Feb. 15, 1902, there had been no relapse. Œsophagoscopy showed that the previously yellowish cicatrix had become greyish-red.

CASE 2.—A boy, aged 28 months, drank a small quantity of caustic soda in June, 1901. In Dec., 1901, he could swallow soft bread but not meat. The stricture admitted with difficulty a bougie $9\frac{1}{2}$ mm. in diameter. Between Dec. 16 and Dec. 31 6 hypodermic injections of $2\frac{1}{2}$ minims of a 15 per cent. alcoholic solution of thiosinamin were given. On Jan. 13 a series of bougies measuring from 7 mm. to $12\frac{1}{2}$ mm. (No. 21) were passed easily. On Jan. 27 the boy swallowed better than before, though not so well as was expected after the introduction of the large bougie. Probably the cicatrix was tender, and further improvement was possible.

CASE 3.—A boy, aged $3\frac{1}{2}$, drank a solution of caustic potash on Oct. 14, 1900. Progressive dysphagia followed, and in Nov. no solids could be swallowed. The stricture admitted only the finest cat-gut bougie. Eight weeks after the accident 3 minims of a 5 per cent. solution of thiosinamin were injected hypodermically. On Dec. 14, after 5 injections, there was considerable improvement in swallowing. On Jan. 2, 1902, however, after the twelfth injection, a relapse occurred. The injections were therefore abandoned, and mechanical dilatation was resumed. As progress was unsatisfactory gastrostomy was performed.

CASE 4.—A man, aged 22, had an impermeable stricture of the œsophagus. In childhood he had accidentally drunk a solution of caustic potash. On Feb. 15 he had been without food or drink for 6 days, and, as no sound could be passed, gastrostomy was performed. The wound healed perfectly, and food was given by the fistula. On the twelfth day after the operation an attempt to introduce a per-

manent œsophageal tube failed. An injection of 0.049 gm. (less than $\frac{1}{4}$ gr.) of thiosinamin was then given with a view to rendering the stricture more distensible. A few hours later the lower border of the gastric wound separated from the abdominal wall, though there had been firm union, the gastric contents became extravasated and the skin round the wound was intensely inflamed. Cough with purulent sputum appeared and death occurred on March 5.

NECROPSY.—The stricture, which was situated opposite the bifurcation of the trachea, was carcinomatous. The growth was breaking down and had perforated the right bronchus. There was bronchiectasis in both lungs. The peritoneum near the lower margin of the gastrostomy wound was covered with fibrinous flakes.

These cases illustrate at once the advantages and dangers of the method, and give its indications. Thiosinamin acts on every cicatrix, but with varying effect. Old consolidated cicatrices are softened and rendered pliable; this occurred in Cases 1 and 2 with the best results. In more recent cicatrices, the initial softening gives place, if the treatment is continued, to inflammatory swelling. This occurred in Case 3. Recent cicatrices are so softened that they break down, as did the gastrostomy wound in Case 4. Traumatic strictures of the œsophagus should not be subjected to the action of thiosinamin unless the cicatrix has had time to become consolidated, that is, until at least 6 months have elapsed since the swallowing of the corrosive fluid. The treatment should not be prolonged after the desired result has been attained. If gastrostomy has been performed, thiosinamin is permanently contra-indicated. It must also be remembered that thiosinamin acts not only on the stricture, but on every existing cicatrix, and may light up quiescent

foci of tuberculosis. Possibly, also, it may stimulate malignant growths. Acute or sub-acute inflammatory processes, with the probable exception of syphilitic, are intensified.

Thiosinamin appears to have no deleterious action on the general health, but its prolonged use may produce temporary anorexia and debility. It may be given internally, in gelatine capsules containing $\frac{1}{2}$ gr., or in water and glycerine. The daily dose internally is 3 gr.

TRANSACT. OF THE ROYAL ACAD. OF MED.
IN IRELAND, Vol. 19, p. 53.

The Lymphatic Constitution.

By GEORGE PEACOCKE, M.D., F.R.C.P.I.

The cause of sudden death in young children deserves more attention than it has received. It is not infrequently ascribed to convulsions, a convenient term which only describes a symptom of some morbid state. The writer calls attention to a cause that has received little notice in this country. Writing on "The Lymphatic Constitution and its relation to some forms of Sudden Death," Dr. James Ewing says (*New York Med. Jour.*, July, 1897), "Under the term *constitutio lymphatica* has rather recently been described a series of cases presenting a characteristic hyperplasia of the lymph nodes, spleen, thymus, and often of the lymphoid marrow, associated with hypoplasia of the heart and aorta, and frequently also with rachitis. These pathological conditions have been found, especially in cases of sudden death, from a variety of causes, and are believed to indicate diminished vital resistance and special liability to sudden cardiac paralysis." He describes the following case—

A girl, aged 5, had a family history of no importance, except that a brother, aged 2,

had enlarged tonsils, symptoms of post-nasal adenoids, and enlarged cervical, axillary, and inguinal glands. The previous history was that of a perfectly healthy child. Death occurred during chloroform anæsthesia for treating an incised wound of the tongue. The necropsy showed a heart and aorta of normal size. The lungs contained much blood; there were some subpleural ecchymoses; the bronchi were much reddened. The thymus measured $7 \times 5 \times 2$ cm., and covered the upper third of the pericardium. The spleen was slightly enlarged; the Malpighian bodies were extremely prominent and look like large miliary tubercles; the pulp was hyperæmic. In the stomach the solitary follicles were distinctly visible; in the intestine they were very prominent. Peyer's patches were enormously enlarged, the lower lenticular patches were 11 to 9 cm. in length, and the enlarged nodules of the lowest patch were polypoid outgrowths $\frac{1}{2}$ cm. high. The mesenteric glands were much hypertrophied, forming a mass of lymphoid tissue large enough to have been palpated through the abdominal walls. The bronchial glands were of normal size. There was no evidence of rickets. Microscopic examination showed hyperplasia of lymphoid cells, and in the spleen a markedly increased deposit of pigment granules.

The writer has observed a series of 4 cases of sudden and unexpected death in which the lymphoid tissue in various parts of the body was markedly abnormal.

CASE 1.—A child was brought to hospital. The parents asserted that he was perfectly well on going to bed the previous night, but that on waking in the morning they thought he "looked queer." They immediately carried him to the hospital, where life was found extinct. He seemed well nourished and to have been well cared for. A thorough necropsy revealed only

an unusually large thymus and greatly enlarged mesenteric glands, swollen Peyer's patches, and solitary follicles so prominent throughout the entire intestinal tract, but especially in the duodenum and jejunum, as to appear like grains of sago closely set in the mucous membrane.

CASE 2.—A boy aged 10, had apparently not been in his usual health for a few days, but was not sufficiently unwell to seek medical advice. He was suddenly seized with an attack which was described as convulsions, and when brought to hospital was dead. The necropsy, as in previous case, showed that he was well cared for. There was slight congestion of one lung. The mesenteric glands were enlarged. Peyer's patches and the solitary follicles were prominent and swollen. All the other organs healthy. No note was made of the condition of the thymus, so presumably it was, at any rate, not very large.

CASE 3.—An apparently healthy, well nourished, and rather big child, aged 4 months, had been under treatment for a *nævus* on the lower lip. Electrolysis had been used on several occasions under chloroform, fortunately without fatal result, for death from chloroform narcosis is held to occur frequently in subjects of the lymphatic constitution. Death took place suddenly without apparent cause. The necropsy was most exhaustive. No enlarged superficial glands were noticeable. The heart was healthy. One lung showed some congestion, and there was one slightly enlarged bronchial gland. The thymus measured 4 in. in length. The mesenteric glands were greatly enlarged. Peyer's patches were prominent, and the solitary follicles of the large intestines were distinctly enlarged, but not to the same extent as in the previous cases. The spleen was firm and somewhat enlarged, but the Malpighian corpuscles were not specially prominent.

CASE 4.—A small, badly nourished child, aged 9 months, died suddenly. The mother said he was in his usual health until the previous day, when he seemed to have a slight cold and cough. He had been given his dinner of bacon and cabbage, when he was seized with some kind of fit, in which, according to the mother, his face became quite black. When brought to the hospital life was extinct. The necropsy showed that the inguinal and axillary glands were considerably enlarged. In each lung was a patch of congestion. The bronchial glands were not enlarged. The thyroid and larynx appeared normal. The thymus measured 3 in. in length. The mesenteric glands were much enlarged, but there was no evidence of hyperplasia of the lymphoid structures in the intestine. The spleen was enlarged, and the Malpighian corpuscles were well marked. The brain was not examined.

These 4 cases present the following common features:—(1.) Up to the time of death the children were, to all appearances, healthy, or only suffered from some trifling ailment. (2.) Death was sudden and quite unexpected. (3.) The necropsies revealed morbid appearances only in those parts in which lymphoid tissue is formed—changes which are present in subjects of the status lymphaticus. Microscopic examination of practically all the organs in Cases 3 and 4, showed that they were normal, with the following exceptions:—The solitary follicles and Peyer's patches were enlarged from increase of adenoid tissue. The thymus and lymphatic glands showed simple hypertrophy. The thyroid in Case 3 was much infiltrated with round cells, probably inflammatory, which lay chiefly in the normal spaces of the gland. The spleen showed slight increase of adenoid tissue. In Case 4 there was marked increase of adenoid tissue in the spleen, where it infiltrated the pulp to a large extent. The

following case subsequently came under the writer's notice :—

CASE 5.—A boy, aged 6, was admitted to hospital. He was suddenly taken ill in the morning. The symptoms—fever, headache, some irregularity of the pupils, and retraction of the head—suggested meningitis. There was a discharge from the right ear. The respiration was very rapid and the possibility of pneumonia was entertained. He rapidly grew worse, and died within 24 hours from the onset of the illness. The necropsy showed that the brain was perfectly healthy. On opening the thorax the size of the thymus gland was remarkable. The lungs were pneumonic. The lower lobe of the left lung was solid and airless, and there was a similar patch about the size of a walnut in the lower lobe of the right lung. The heart seemed healthy. There was great enlargement of the mesenteric glands, the spleen did not seem affected. The solitary follicles of the small intestine were much enlarged and prominent, and Peyer's patches were quite distinct and swollen. The solitary follicles of the large intestine were distinct, but not so swollen as those of the small intestine. The cause of death was, no doubt, primarily pneumonia, but it is unusual for pneumonia to cause death within 24 hours in an apparently healthy boy of 6. Possibly the lymphatism was responsible for the sudden collapse.

The condition described above is not mentioned in any English text-book, but Osler devotes an article to it, under the title Lymphatism. He describes hyperplasia of the intestinal lymphatic structures, moderate enlargement of the spleen with prominent Malpighian bodies, enlarged thymus, hyperplasia of bone marrow, (the yellow marrow of the long bones in young adults being often replaced by red), hypoplasia of heart and aorta, occasional enlargement of the

thyroid, and evidence of rickets. Of these changes the hyperplasia of the lymphatic structures seems to be the most constant and essential characteristic; hypoplasia of the heart and aorta is frequently added, as is also evidences of rickets and enlargement of the thyroid. As long ago as 1858 Friedleben denied that an enlarged thymus gland could produce fatal laryngismus either by direct pressure on the air passages or great vessels, or by reflex, cardiac, or respiratory paralysis arising from the thymus. Grawitz, Nordmann, and others maintained the contrary, but Paltauf has shown that some underlying constitutional defect must be assumed to account for many sudden deaths usually referred to the pressure of an enlarged thymus upon the bronchi, great vessels, or pneumogastric. Further, examination of the cases of "*Thymus Tod*" of earlier writers shows that in a majority the tonsils, spleen, and lymphatic glands were more or less hypertrophic, though significance was not attached to this fact. What is the exact relation of hypoplasia of the heart and aorta to the lymphatic constitution is not clear. Numerous writers, including Virchow, Rokitsky, Reigel and Ortner, have published cases to show that subjects with this congenital defect have diminished vital resistance, and that apparently trifling causes have led to sudden death. As the hypoplasia is not present in all cases it cannot be essential. In subjects of the lymphatic constitution death has taken place under anæsthetics, after injection of antitoxin, after accidentally falling into the water, and while bathing. Escherich regards laryngismus stridulus as probably associated with this condition.

Since it is held that many, if not most, of the deaths from chloroform administered by capable anæsthetists are referable to lymphatism, it is important to recognise the condition

during life; but there are no sure data. Of most importance is the discovery of a local or general hyperplasia of the lymphatic structures—enlarged superficial glands and tonsils, post-nasal adenoids, slight swelling of the thyroid, dulness over the sternum (indicating a persistent or enlarged thymus), and enlarged mesenteric glands. Examination of the blood in suspected cases may also be of service. Dr. Ewing observed well-marked lymphocytosis in one case. Lymphatism may be the clue to many inexplicable cases of sudden death, and may in the future play an important part in medico-legal questions.

See also "Hypertrophy of the Thymus and Death under Chloroform" ("REVIEW," p. 301).

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Feb. 11, 1902.

Chloroform in Heart Disease.

By H. HUCHARD.

In affections of the heart or aorta advice is often asked as to the risks of chloroform anæsthesia for operation. In all cardiac disease, mitral or aortic, valvular or arterial, with or without angina, the patient may be anæsthetised. Chloroform is even less dangerous than in some other affections, notably pulmonary changes with much dyspnœa. The only contraindications are a state of asystole, toxi-alimentary dyspnœa, and acute pulmonary œdema. But these conditions are not permanent. Asystole may be promptly improved by the use of digitalis; toxi-alimentary dyspnœa will disappear in a week on absolute milk diet and theobromine, and even acute œdema of the lungs may yield to energetic treatment, so that even in these cases the contraindication is not absolute. So safe is chloroform in

cardiac disease that it can be used in stenocardiac attacks although it has been superseded by nitrite of amyl. It has been regarded as favouring fatty degeneration, but Hare has noted an improvement in such cases after anæsthesia and states that cardiac patients rarely succumb to anæsthetics, which when well administered exercise rather a favourable influence.

Earlier authors did not regard cardiac disease as a contraindication to chloroform anæsthesia except in extreme cases, but more recently theoretical rather than practical restrictions have been advanced. It has been urged that softening or flaccidity of the myocardium from myocarditis and fatty change predisposes to accidents under chloroform, such as reflex shock from naso-laryngeal irritation acting on the weakened heart. The naso-laryngeal reflex can be avoided by chloroforming by the "drop-by-drop" method. The safety with which patients whose heart muscle is profoundly altered can be anæsthetised is a matter of daily observation.

Fatty degeneration has been regarded as completely contraindicating the administration of chloroform, but it is frequently confused with cardio-renal sclerosis. In this condition the danger during anæsthesia consists rather in the presence of dyspnœa than in threatened asystole. Such subjects should be carefully watched while under chloroform, just as in such conditions as thoracic deformity, obesity, dropsy, aneurysm, toxi-alimentary dyspnœa and the chief dyspnœic cardiac lesion—mitral stenosis. In none of these conditions is there an absolute contraindication to chloroform, but its use requires special care.

Adhesion of the pericardium deserves special mention, but adhesion of the two layers is rarely suspected during life and is therefore no

contraindication of chloroform, while external adhesion of the pericardium to the mediastinum is frequently followed by dilatation of the heart and muscular insufficiency accompanied by a special dyspnoea. If death is not to be feared under chloroform it may happen a few hours or days later. When operation is necessary under such circumstances a course of cardiac tonics is advisable.

A distinction has been made between the different valvular affections. Patients with mitral insufficiency are thought to bear chloroform well, with tricusped regurgitation not to do so, while aortic regurgitation is the worst condition of all especially when of great extent and complicated by a lesion of the myocardium. This is ascribed to its tendency to cause syncope, which is incorrect. Syncope is never a symptom of cardiac disease, except in angina pectoris, where it may be at once fatal or in the affection of Stokes-Adams. In 170 cases of aortic insufficiency noted by the writer syncope never occurred from the valvular lesion. In 49 of these the patients were anæsthetised, all safely.

Angina pectoris, especially when coronary, has been regarded as a contraindication, but in 7 cases known to the writer there was no bad result. In a severe case in which crises were produced on the slightest movement and fissure of the anus was present, stretching of the sphincter, was successfully performed. Several physicians advised incomplete anæsthesia, but the writer insisted that if chloroform was given it should be given as completely as possible, especially as in the perineal region the reflex sensibility persists longer than elsewhere, which itself constitutes a source of danger in operations about the anus. Incomplete anæsthesia is based on a fear of the effects of chloroform in cardiac cases, but in these cases more than others it is necessary to administer chloroform to such an extent

that the reflexes are sufficiently abolished as they frequently cause syncope.

The method of administration is important. To give large and overwhelming doses, especially from the outset, is bad practice. In 243 deaths under chloroform collected by Julliard 127 arose from primary reflex laryngeal syncope at the beginning of anæsthesia. Cardiac patients should be carefully watched in the early stage. The method of administration indicated by Simpson and defined by Labbé should be followed *i.e.*, small doses should be given continuously till a certain toleration is established. This drop-by-drop method is especially suitable in cardiac cases as both reflex laryngeal syncope from the sudden contact of chloroform vapour with the vocal cords and toxic syncope from the absorption of too much chloroform are avoided. Anæsthesia should be carried to its ordinary surgical limits and the operation should not be begun till the stage of excitement has terminated, indeed, during this period all stimulation of peripheral nerves should be avoided. Anæsthesia should not be carried to the total suppression of the palpebral reflex but should be stopped when it is sensibly diminished. The writer has allowed the administration of chloroform in over 300 cardiac or aortic cases without accident. Ether may be preferred in certain cases but its use is not advisable in pulmonary cases or toxic dyspnoea, and is especially dangerous when acute œdema of the lungs is threatened, because of the bronchial secretion which it produces.

The writer believes that death under chloroform in cardiac as in other cases is chiefly due to the fault of the anæsthetist, and urges greater care in this direction, and the careful selection and training of those who administer chloroform in hospital practice. Chloroform when well prepared, and above all, well administered, does not kill.

GAZ. HEBD. DE MÉD. ET DE CHIRURG.,
April, p. 337.

Hæmorrhages in Acute Miliary Tuberculosis.

P. LONDE and M. BRÉCY.

In acute phthisis, Herard, Cornil, and Hanot observed hæmaturia (*La Phthisie Pulmonaire*), and Walter, Charcot, and Laveran purpura. The changes in the blood, probably aided by the alterations in the capillaries, produce a hæmorrhagic tendency. Hæmorrhages occur in acute phthisis as often as in typhoid fever. Hæmoptysis is the most common, but epistaxis and intestinal hæmorrhages may occur. In 244 cases of acute phthisis Leudet observed 9 in which hæmorrhages took place from another site than the lungs. Hanot and Gilbert recorded a case of rapid tuberculosis with hæmorrhages attributable to a hepatic lesion (*Archives Gen. de Méd.*, 1889). Mathieu has published a case of miliary tuberculosis, with epistaxis and hæmaturia (*Archives Gen. de Méd.*, 1889). Hepatic lesions predominated, and there were ulcers in the bladder which accounted for the hæmaturia. There were also caseous nodules and miliary granulations in the kidney. Hanot saw a tuberculous patient who had epistaxis, slight hæmaturia, and an intestinal hæmorrhage which caused death (*Archives Gen. de Méd.*, 1885). At the necropsy he found pulmonary tuberculosis in all stages, caseous nodules in the cortex of the kidneys, and numerous intestinal ulcers. In the middle of one of these was an ulcerated blood vessel of the size of a goose-quill, blocked by a clot. Hanot states that in consequence of the *endarteritis obliterans* peculiar to tuberculosis such intense intestinal hæmorrhages are rare. Ulcers and tuberculous lesions of vessels often explain why these

hæmorrhages occur. Alcoholism predisposes to them, not only because of the injury it does to the liver, but also because of its effect on the arteries and capillaries.

A man, aged 33, addicted to alcohol, who had had several attacks of hæmoptysis and frequent epistaxis, came under observation in Nov., 1900. In Dec. blood was noticed in his stools. In Jan., 1901, he had hæmaturia. Towards the end of Feb. there were profuse hæmorrhages from the nose, mouth, urethra, and anus. He was admitted to hospital on March 1 in a typhoid state; his temperature was above 102° and his pulse was 92. He had fits of delirium and diarrhœa. The spleen was enlarged. He coughed and micturated blood. There were dulness and crepitations under the right clavicle and in the left supra-spinous fossa. The delirium increased, and after a slight remission the hæmaturia, melæna, and epistaxis recurred. Death occurred on March 12. Except during the last few days, when it fell rapidly, the temperature remained about 102°.

Widal's reaction was twice found negative. The alcoholism might have suggested malignant jaundice, but there was no hepatic symptom. One day some purpuric spots of the size of a pin-head were noticed on the lower limbs, and this suggested the diagnosis of purpura hæmorrhagica. But the spots disappeared, and examination of the blood showed normal retractility of the clot, and the absence of "redissolution points" upon which Hayem has insisted (*Presse Méd.*, 1895). Infectious endocarditis was suggested, but examination of the heart was negative.

NECROPSY.—Tuberculous granulations were scattered through the lungs, and there were old tuberculous lesions at the apices. There was a small cavity at the right apex. The right lobe of the liver contained an old hydatid

cyst which was filled with bile. The rest of the organ was normal. The suprarenal capsules were swollen and changed into huge caseous masses. The kidneys were normal in size, and their capsules peeled readily, but each contained several caseous nodules. In the middle of the small intestine were numerous round ulcers.

The writers conclude that there is a hæmorrhagic form of tuberculous disease to which certain lesions, possibly hepatic ones, predispose, but the liver may not be profoundly affected or the blood manifestly changed. This form appears to pertain to tuberculosis sufficiently old to produce advanced lesions in different organs.

PRESSE MÉDICALE, April 9, p. 339.

Leprosy and Syringomyelia.

By H. DE BRUN.

A woman, aged 24, born and brought up at Kfour, Syria, came to hospital with a deformity of the hands and considerable diminution of their muscular force. The deformity which was greater in the right than in the left hand was characterised by the extension of the metacarpo-phalangeal, and the flexion of the inter-phalangeal joints. There were also atrophy of the thenar and hypothenar eminences and hollowing of the inter-metacarpal spaces by the disappearance of the interosseous and lumbrical muscles. These symptoms taken together, in the great majority of cases point to progressive muscular atrophy of the Aran-Duchenne type. But in this case this diagnosis was excluded because (1) the forearm, arm, deltoid muscles and the muscles of the leg were not affected, and (2) there were disturbances of sensation not found in the Aran-Duchenne type of paralysis.

There was complete analgesia of the hands and lower two-thirds of the forearm, and partial analgesia of the upper third of the forearm and arm. In the feet and legs was complete analgesia and in the thighs diminished sensibility. There was analgesia of the cheeks, nose, nostrils, and nasal mucous membrane. Sensibility to pain was present in the conjunctiva and mucous membrane of the tongue and gums. Wherever the analgesia existed it was total: the skin could be pinched, pricked, or destroyed without pain or even discomfort. The analgesia extended also to the deeper parts: a needle could be driven through the skin and the subjacent muscles without discomfort.

The analgesia was accompanied by remarkable insensibility to heat. Wherever sensibility to pain was absent sensibility to heat and cold had also disappeared. Thus a spoon which had been held in boiling water could be applied without pain to the back of the hands, forearms, legs, feet, or cheeks. Even when the spoon was hot enough to produce instant blistering the patient could not distinguish it from one dipped in ice-cold water. She had scalded herself severely with boiling water without feeling the slightest pain. But tactile and muscular sense were unimpaired. On the analgesic areas the patient immediately perceived the slightest touch, and could describe the shape and indicate accurately the weight of articles placed in her hands. She could feel pressure applied to her fingers, hands, and forearms, and could tell exactly the position in which her limbs or fingers were placed. She had thus total loss of sensibility to pain and heat, with preservation of sensibility to touch and muscular sense—a condition characteristic of syringomyelia. Moreover

there was a number of trophic changes often found in syringomyelia. The skin on the back of the hands and on the fingers was smooth, thin, hard, glistening and tense; the nails were thick, striated, and deformed. There was on the right sole, at the base of the little toe, a small abscess, which was incised without pain. It presented a striking similarity to the abscess in the form of syringomyelia, described by Morvan.

The writer, who is a professor at Berût, was surprised at the number of cases of syringomyelia he saw in Syria. He believes he has now found an explanation. In this case there were, besides the symptoms of syringomyelia, a number of phenomena which suggested some special infectious process, progressing coincidently with the symptoms of syringomyelia. Among these were persistent articular pains, which had lasted for some 6 years. For a time they were localised in the left radio-carpal joint. Then they became general, omitting no articulation, but affecting particularly the joints of the lower extremities where they produced contractures and "night-startings." There were also peculiar areas of oedema, probably due to interference with the vaso-motor nerves. The oedema began about 6 years before and affected the face, neck, hands, lower half of the forearm, feet, and lower third of the legs. It lasted an indefinite time, and disappeared without the patient being able to tell its precise mode of appearance or disappearance. These arthropathies, there is no doubt, pertained to the syringomyelia, and only served to confirm the diagnosis. But there was besides a group of symptoms which pointed to infection with leprosy. There was a marked diminution both in the duration of the menses, and the amount of blood lost. This began about the same time as the symptoms of

syringomyelia. Although the writer does not consider this symptom pathognomonic, he has found it in the majority of his cases of leprosy. A more important symptom, and one upon which the patient laid much stress, was a sensation of heat—"of burning fire"—over all the body, which often compelled her to take off her clothes. This burning sensation would then change into an intense and disagreeable feeling of cold. The writer has observed this symptom in a large number of cases of leprosy affecting the nervous system, especially in a patient who had anæsthetic leprosy, with the characteristic claw-hand, double facial paralysis, and nodular swellings on the nerves of the forearm and who complained exclusively of these sensations of heat, though he had absolute anæsthesia to thermal stimulation.

But there was another symptom, pathognomonic of leprosy—an eruption which appeared on different parts of the body, first on the arms, then on the legs, and finally on the trunk and face. The hands and feet escaped. The eruption had commenced about 6 years before, simultaneously with the arthropathies, and consisted of reddish spots, round or irregular in shape. They varied in size, some being as large as a two-franc piece, others as the palm of the hand. On exposure to cold they turned blue, but they were not attended with itching or other subjective sensation. The spots persisted for some years. Some of them grew pale in the centre, and became changed into reddish rings surrounding a variable area of yellowish skin. They would then diminish, leaving traces. In the lower dorsal and lumbar region were two large blanché spots surrounded by a yellowish border. This was the vitiliginous eruption characteristic of leprosy. The writer therefore concluded that the case was one of leprosy. But what of the diagnosis of syringomyelia

to which so many symptoms pointed? Should the case be regarded as one of leprous polyneuritis with the phenomena of syringomyelia? Pitres has recorded a case of the kind in a man of 46 with great trophic changes in all his extremities and a disturbance of sensation such as is met with in syringomyelia. But on examination of a small piece of nerve excised from the forearm he found a large number of leprosy bacilli. The writer concludes that probably his patient had leprosy with syringomyelia, and points out that such a combination is not uncommon. Chauffard has published a case of leprosy in which the two upper limbs, the face, and the upper part of the thorax presented the perfect type of syringomyelic anæsthesia; and Rosenbach and Babinski have published similar cases. The writer has also seen another patient aged 35, an undoubted leper, with mutilations of all the toes and fingers, and a vitiliginous patch between the shoulders, who had also in the upper and lower limbs the disturbances of sensation characteristic of syringomyelia.

Danielsen and Boeck were the first to point out alterations of the cord and its membranes in leprosy. They found atrophy, and alterations in the colour of the grey matter. In some cases the atrophy was so marked that the cord was no thicker than a pencil. Stendner saw in a case of leprosy colloid changes in the grey

matter, chiefly in the posterior horns and the corresponding commissure. Then Laughans confirmed the softening of the posterior horns, and the corresponding commissure, which were invaded by cavities. Later, Colella and Stanziale, in a case in which Hansen's bacillus was found in the brain noticed, among other spinal lesions, changes in one of the posterior horns. Souza Martins reported to the Congress at Rome in 1894 the case of a patient who had shown symptoms of syringomyelia. At the necropsy a cavity was found in the grey matter of the cord in the cervical region, which contained the bacilli of Hansen. Kalindero asserts that he has seen patients with anæsthetic leprosy who were found to have vacuolisation round the ependyma, with the presence of the specific bacilli. The writer therefore concludes that there are cases in which leprosy affects the cord and produces the symptoms of syringomyelia. He divides the nervous form of leprosy into two varieties—the common neuritic and a rarer myelitic variety. Though he believes that leprosy may cause syringomyelia he does not hold that every case is of leprous origin. Pitres could not find the bacillus of Hansen in the cords in 2 cases of syringomyelia which he examined minutely. Further research is required to ascertain in what proportion of cases leprosy is a cause of syringomyelia.

MEDICINE.

Epistaxis in Children from Rheumatism.—Sydney Phillips, M.D., F.R.C.P. (*Lancet*, Feb. 22, p. 512).—The association of epistaxis with evidences of rheumatism appears to be more frequent than can be a coincidence.

CASE 1.—A boy, aged 10, was brought to hospital on Aug. 1, 1898, for epistaxis. At 5 he had rheumatic fever. For years, even before the rheumatic fever, he had had attacks of epistaxis. He was also subject to sore-throat. He had no pain but the temperature was 99·6°. There were effusion of fluid into both knee-joints and a mitral systolic murmur.

CASE 2.—A girl, aged 6, was brought to hospital on Sept. 25, 1900, for epistaxis. She had been subject to it for 3 years, and it had recently become more profuse. She was very anæmic and had enlarged tonsils. Epistaxis recurred on Oct. 18 and on Nov. 21 the right knee became full of fluid. This gradually subsided, but in March, 1901, she again had effusion into the knees and pains in the limbs.

CASE 3.—A boy, aged 11, was brought to hospital on Nov. 6, 1900, for epistaxis. The left knee was full of fluid. He had no pain, and the condition was discovered only in searching for a cause of the epistaxis. He bled freely from time to time till Dec. 18, though he was taking salicylates, but aspirin seemed to do him good. In March, 1901, he came to the hospital again with considerable pain and swelling of several joints.

The writer relates 10 cases in all. In each the urine was free from albumen. There was no local nasal disease, and no cause could be found for the epistaxis except the rheumatic diathesis. He also refers to other cases in which the epistaxis either came on with an attack of acute

rheumatism, alternated with attacks of arthritis, was preceded by them, or occurred in connexion with chorea. That in children synovial effusion into joints and articular rheumatism may occur without pain has often been pointed out, but it is not sufficiently recognised.

Epistaxis is one of the toxic effects of salicylates given internally. Dr. L. Shaw (*Guy's Hosp. Rept.*, 1887), found that it occurred in 11 out of 174 patients under the treatment for rheumatism. None of the writer's patients, however, had taken salicylates before the epistaxis occurred, and all but one took the salicylate with good result. Possibly the epistaxis in some cases of rheumatism treated by salicylates was due to the disease and not to the drug.

The only suggestion the writer can find that rheumatism has any influence in the causation of epistaxis is in a paper by Dr. Rendu (*Semaine Méd.*, June, 1881) in which it is said that epistaxis may occur in young persons who become later subjects of piles or rheumatism. There is nothing inherently improbable in the view that rheumatism may cause epistaxis, for many other blood states do so, and rheumatism is a known cause of purpura hæmorrhagica.

Facial Paralysis from Catarrhal Otitis Media.—H. O. Reik, M.D., (*Johns Hopkins Hos. Bull.*, April, p. 83).—In a series of 135 cases of facial paralysis Heubschmann found that 6 per cent. were due to injury and 9 per cent. to ear disease, and that 75 per cent. were of the so-called rheumatic or refrigeratory type. In all the text-books it is said that exposure to cold is the principal cause of facial paralysis. But no satisfactory explanation is given of the pathologi-

cal process. When disease of the ear is mentioned only suppurative otitis media with necrosis of the tympanum is considered. The writer is convinced that in most, if not in all cases of facial paralysis of the "refrigeratory or rheumatic" class, acute or sub-acute otitis media is an intermediary condition between the exposure to cold and the paresis. Dehiscence of the Fallopian canal in the tympanum frequently occurs; the upper half of the eminentia pyramidalis, a part of the canal wall, is under ordinary circumstances very thin and often presents deficiencies, so that the facial nerve sheath often lies directly in contact with the mucous membrane of the middle ear. Moreover, Zuckerkandl has called attention to a normal small foramen in the canal wall, just above the oval window, for the passage of a branch of the arteria stylo-mastoidea to the stapes. Thus an effusion in the tympanum may press on the facial nerve or inflammation may extend to its sheath.

The usual history of facial paralysis is that the patient notices paralytic symptoms a few days after catching cold. After the ordinary symptoms of a cold in the head or sore throat he may have prodromal symptoms, such as pricking or stinging pain in the ear with a sense of stiffness, slight deafness, and tinnitus. The ear symptoms are usually mild and sometimes attract so little attention that when the patient has become absorbed in the more alarming facial deformity, he forgets them and, unless closely questioned, does not mention them. The following case is typical of a series of 4 observed by the writer.

A man came under observation on Aug. 29. Five days previously he noticed signs of right facial paralysis. He had suffered slightly from a cold in the head and pain in the right ear. The mastoid was tender. The tympanic membrane was not congested but there were indications of fluid in the tympanum. There was complete right facial paralysis, even of the orbicularis palpebrarum and occipito-frontalis. Paracentesis tympani was performed. When the

membrane was incised there was a distinct ripping sound like that of the cutting of parchment, showing that the membrane was on the stretch. Several drops of serous fluid immediately escaped. A sterile cotton wick was inserted. Next morning this was saturated with serum; the mastoid tenderness had diminished markedly and there was no pain. On the following day improvement in the paralyzed muscles began. The free discharge of serous fluid continued. On Aug. 31 he could close the upper lid to the lower edge of the pupil; on Sept. 9 he had regained almost complete control of facial muscles. The discharge ceased within a few days. There was evidently mild pharyngitis, which was followed by sub-acute otitis media, involving the mastoid antrum and perhaps other cells, which produced paralysis through the exudation. This relation between otitis and facial paralysis was suggested as long ago as 1857 by Berard, and by Deleau; since then illustrative cases have been reported by several writers. In all cases of facial paralysis the ear should be examined. If there is exudation in the tympanum the most rapid and satisfactory results will be obtained by paracentesis.

Two Cases of Paralysis Agitans in a Family: Improvement under Hyoscine.—

Judson S. Bury, M.D., F.R.C.P. (*Lancet*, April 19, p. 1097).—The chief points of interest in the following cases are (1) the occurrence of paralysis agitans in a brother and a sister; (2) its onset at a comparatively early age; and (3) the improvement under hyoscine. The patients first entered hospital on Sept. 17, 1900, and remained under treatment for 11 weeks. They were readmitted on Dec. 31, 1901, and left on Feb. 5, 1902. The man, aged 41, a mill-spinner, had to give up work at the age of 35, owing to weakness in the legs and a tendency to fall on the face. A year later the legs began to shake, after a few months the arms were affected, and subsequently the head. He attributed the condition to

working in a very hot room and then going out into the cold. His sister stated that her illness began about 18. The tremors came on so gradually that she could not be sure when they commenced, but at 19 they were so bad that she was obliged to give up work in a mill. She attributed her illness to her occupation, which involved the constant contact of her hands with wet and cold yarns.

Both patients presented the characteristic mask-like face, attitude, tremors, and other symptoms of paralysis agitans. The tremor affected the hands, forearms, feet, and slightly the head. In the man the legs shook as they lay extended on the bed. The tremor affected the hands much more than other parts; it could be controlled by voluntary effort; it was absent during sleep, slight on waking in the morning, and worse towards night or after exertion. It was not symmetrical; thus, the man's left hand trembled more than his right. The movements of the limbs were weak. The weakness was irregularly distributed; thus, the grasp of the man's right hand was weaker than that of his left, while the muscular power of the left leg was weaker than that of the right. The muscles of both arms and legs showed increased irritability to tapping. The knee-jerks were exaggerated and in the man true ankle clonus was obtained several times.

Treatment consisted of massage and the administration of hyoscine. At first the drug was given hypodermically, the dose being gradually increased from $\frac{1}{160}$ to $\frac{1}{80}$ gr., which was injected once a day. As the larger dose produced nausea, dryness of the mouth, and giddiness the injections were discontinued. Subsequently hyoscine in chloroform water was given by the mouth, as recommended by Dr. R. T. Williamson. At first $\frac{1}{160}$ gr. was given twice daily. This dose was gradually increased to $\frac{1}{80}$ gr. Both patients took this amount without ill effects. They felt more comfortable and were less troubled with flushings and restlessness. The tremor became less marked.

The writer agrees with Dr. Williamson that hyoscine is probably the most useful drug in the treatment of paralysis agitans. As a rule it diminishes or arrests the tremor, checks the troublesome restlessness and the desire to change position, and relieves the "hot flushes" and unpleasant sensations of heat. Being a powerful drug it must be administered with care. It is safer to give it by the mouth than to inject it under the skin. Merck's hyoscine hydrobromate is probably the best preparation; this should be given well diluted in chloroform water. "A prescription which is useful is one-eighth of a grain of hyoscine hydrobromate in 6 ounces of chloroform water. At first 2 teaspoonfuls may be given, then 3, 4 or 5 teaspoonfuls. If necessary the dose may be increased to 6 teaspoonfuls ($\frac{1}{4}$ gr.), providing toxic symptoms are not produced. The hyoscine is best given in the morning, just after breakfast, and again in the evening (just before going to bed) if the patient is troubled with restlessness and sleeplessness during the night" (R. T. Williamson: *Paralysis Agitans*, 1901). See also "REVIEW," Vol. II., p. 345.

Adiposis Dolorosa.—By F. X. Dercum, M.D. (*Philadelphia Med. Jour.*, March 1, p. 396).—Some 24 cases of adiposis dolorosa have been recorded, of which only 3 have occurred in men. The following case constitutes the fourth.

CASE 1.—A man, aged 39, came under observation. He was healthy up to the age of 24, when he had some febrile affection which kept him in bed over 2 weeks. Soon after this he began to grow stout. After a year or two fat began to accumulate in large exquisitely tender masses upon the sides of the chest, abdomen, and other portions of the trunk. About the same time tender masses appeared on the arms and upper parts of the forearms. Smaller deposits took place upon the thighs and upper parts of the legs. There was no spontaneous pain in any of the

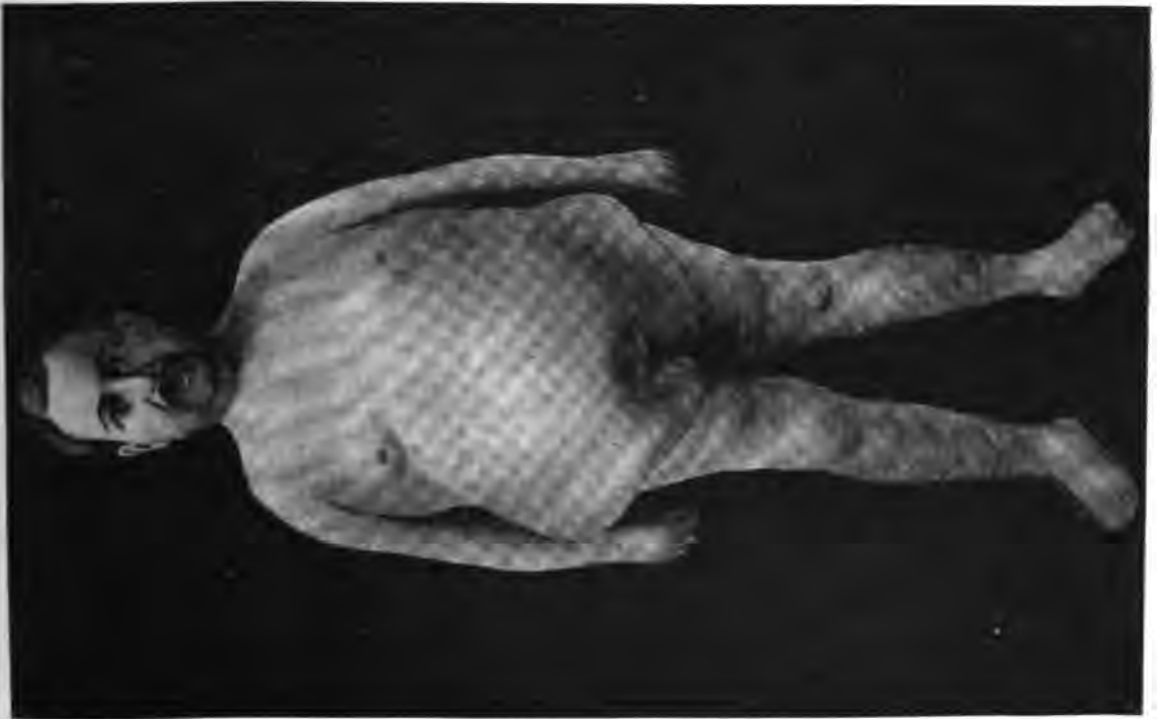
masses. As the deposit of fat increased the patient became very weak and was easily fatigued. Bruises were readily produced by slight blows. Four or 5 years before he came under observation he began to suffer from epileptic fits.

He was much below the normal stature, his height being 4 ft. 10½ in. He presented a striking appearance because of numerous accumulations of fat over the entire trunk. (Figs.) The abdomen was so pendulous that the genitals were concealed. Huge folds of fat hung from the sides of the trunk. The deposits in the arms and legs were not so great in proportion as those in the trunk. All the masses of fat were exquisitely tender. The circumference of the trunk at the axilla was 42½ in., at the level of the nipples 47½ in., at the umbilicus 51½ in., and below the umbilicus 57 in. He weighed 206 lb. The lower parts of the forearms and hands and of the legs and feet were entirely free from fatty deposits, the skin being, indeed, so fine, that the tendons could be readily discerned. There was some fatty deposit on the face, though much less in proportion than in other parts. There was a dependent fold of fat beneath the chin. The face was somewhat flushed, with a tendency to lividity. Irregular flushing, with here and there tendency to lividity, was also observed on various parts of the body. Here and there the veins were somewhat prominent. There was slight left ptosis and some weakness of the internal rectus. In front of the equator of the eyeball the conjunctiva was so translucent that the muscular fibres and the tendinous insertions of the muscles could be seen. Behind the equator the conjunctiva had a thickened yellowish appearance, as if from deposit of fat beneath. Accumulations of fat could be felt in the orbital cavity.

CASE 2.—A woman, aged 33, came under observation. She had been married 12 years but had never been pregnant. About ten years before she began to suffer from pain and tenderness in the trunk and limbs. At the same time she noticed that the thighs were becoming very large.

Gradually enlargement took place in the upper arms and in the legs below the knees. This enlargement was tender. The thighs were so enormously enlarged, that a large mass of fat hung over the knees. There was also enlargement of the upper and middle thirds of the legs, upper arms, and upper and middle thirds of the forearms. There was some deposit of fat over the shoulders and the trunk generally, which was not evenly diffused. There was excessive tenderness over more or less wide areas of the arms, legs, thighs, and anterior and lateral portions of the thorax. She readily became tired: a few movements of the arms caused fatigue especially in the arms. There was a marked tendency to bruising after slight knocks and epitaxis occasionally occurred. There was in the left eye circinate retinitis—a fibrinous and hemorrhagic exudation in the centre of the retina surrounded by crescents of fatty degeneration in Müller's fibres.

Vitaut divides adiposis dolorosa into the nodular, the localised diffuse, and the generalised diffuse forms. Both these cases evidently are of the second form. The preponderance of the deposit in the man was upon the trunk, in the woman upon the thighs. Although there was some enlargement of the upper arms and thighs in the man, this was comparatively insignificant compared with that of the trunk. Both patients presented in a marked manner the characteristic symptoms of fatty deposit and tenderness. Crises of pain or spontaneous pain, such as have been found in other cases were not present in either case. Vitaut regards fatty deposit, pain, asthenia, and psychic phenomena as the four cardinal symptoms of adiposis dolorosa. While fatty deposit and pain are the two most prominent symptoms, marked or even grave asthenia and psychic or general nervous symptoms were so prominent in all the cases which the writer has observed that he ascribes great importance to them. The asthenia appears not to depend upon the fatty deposit, at least, not directly. Thus, in the case of the woman the fatty



deposit was not at all marked upon the trunk and to a comparatively slight extent upon the arms, yet a few simple movements of the arms brought on decided fatigue and weakness. Marked mental depression and slowness are commonly present. There may be hallucinations, or great irritability and even vague ideas of persecution. Neurasthenia and hysteria have been described. Among the less frequent nervous complications is epilepsy, which was present in the case of the man. It has been observed in one other case.

At the necropsy made in the writer's original case, and in Dr. Burr's case, there were found interstitial inflammation of the nerves passing through the fatty deposit and striking changes in the thyroid gland. The latter presented signs of atrophy, with here and there evidences of hypertrophy, which appeared to be an effort at compensation. In Dr. Burr's case there was also enlargement of the pituitary body, in the writer's there were sclerotic changes in the columns of Goll.

See also "REVIEW," Vol. III., p. 675.

Latent Pneumonia.—Harvey Littlejohn, M.B., F.R.C.S., Ed. (*Edinburgh Med. Jour.*, April, p. 317).—Of acute inflammatory diseases which may run a latent course throughout pneumonia is the most common. When death occurs suddenly and without obvious signs of illness suspicions of violence may be aroused. The writer has collected from his notes on necropsies during the years 1888-90 and 1897-1901, 33 cases of latent pneumonia. All have the following characteristics:—(1) The disease was unsuspected during life, the sufferers exhibited no signs sufficient to attract the attention of those living in close relation with them. (2) Death occurred suddenly, or within an hour or two of the appearance of serious illness, and before medical assistance was summoned. (3) The disease was well advanced, the lung usually being in a state of grey

hepatisation. In some cases strict inquiry of the friends disclosed that the deceased had complained of a feeling of illness, shortness of breath, pain in the side, cough, etc., but such complaints were indefinite and usually were not repeated. The symptoms apparently never excited alarm and they were never such as to lead the person to seek medical advice. The suddenness of the deaths was striking. In several instances death took place during the night in bed, in others during the day—in the street or at home. Death was frequently the apparent result of some slight exertion, such as putting on clothes, or it occurred in the water-closet. In a few cases it was not sudden: the deceased was seized with dyspnoea and collapse, quickly became unconscious, and died in an hour or two.

One fact of great significance stands out—the prevalence of alcoholism. In 7 cases no facts could be obtained; in one case the deceased was strictly temperate; in the remaining 25 cases the subjects were constantly intemperate. Of these 6 were simply known to drink alcohol in excess whenever circumstances permitted, while the remainder were constantly intoxicated, and lived in a state of debauch for several days prior to death. As to age, one patient was between 20 and 30, 5 between 30 and 40, 10 between 40 and 50, 8 between 50 and 60, and 9 over 60. The greater incidence above 40 seems to show that a special cause is responsible, which perhaps is alcohol. The right lung was affected in 18 cases, the left in 11, and both lungs were affected in 4.

When latent pneumonia is found in the body of a person who has been seriously injured questions of great nicety will arise as to whether death was due to the pneumonia or to the injuries. A man with advanced pneumonia may be brawling. Should he suffer violence and die the legal responsibility will have to be fixed. In arriving at a decision much will depend on the character of the injuries and their liability to be fatal in the given circumstances. If they are such as are

not usually followed by immediate death, the practitioner should be inclined to lay stress on the pneumonia, which is liable to cause sudden collapse and death after slight exertion, or even after emotions of anger, excitement, etc.; and if the deceased was suffering from dyspnoea or other symptoms of the disease he should be the more ready to give preference to this cause. The absence of signs of contusion of the chest or fracture of ribs and comparison between the date of the supposed violence and the stage of pneumonic consolidation of the lung will usually enable an opinion to be formed as to the relation of the pneumonia to the injuries and death.

Œsophageal Diverticula above the Left Bronchus.—A Brosch (*Virchow's Archiv.*, Bd. 162, Hft. 1, p. 22).—Zenker and von Ziemssen

divide œsophageal diverticula into "pulsion (*i.e.* propulsion) diverticula" and "traction-diverticula," the former arising through pressure on the œsophageal wall from within, the latter through traction from without. The lower part of the pharynx also takes part in the formation of œsophageal diverticula. The above authorities state that propulsion-diverticula are exclusively (or with the rarest exceptions) confined to the lower part of the pharynx at its junction with the œsophagus and that they arise in the middle or a little to one side of the posterior wall. The writer records 2 cases in which propulsion-diverticula were situated lower on the anterior œsophageal wall and to the left of the middle line, in the space filled with cellular tissue between the aortic arch and left bronchus ("cavum broncho-aorticum," Fig.). They were of the size of a walnut, freely movable, and consisted of the mucous and serous layers which protruded hernia-like between the longitudinal fibres of the muscular coat. Their mobility and freedom from adhesions proved that they were true propulsion, and not traction diverticula, which owing to the frequency of adhesions between the œsophagus and tuber-

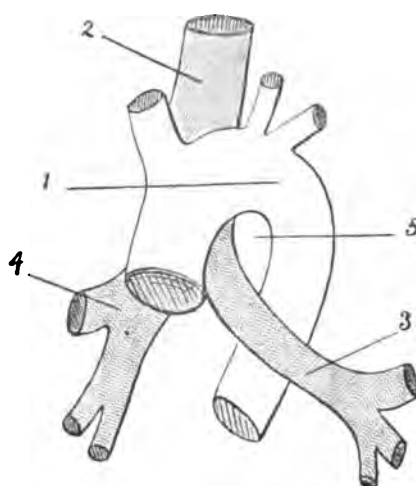


Diagram of the Relations of Epibronchial Propulsion Diverticula.

1, Aortic arch; 2, Trachea; 3, Left and 4, Right bronchus; 5, "Cavum Broncho-Aorticum."

culous bronchial glands are comparatively common at this level. The writer points out that the œsophageal wall is at this point everywhere bounded by more or less rigid structures except opposite the cavum broncho-aorticum. The conditions for the formation of propulsion-diverticula by the pressure of large pieces of food during swallowing are, therefore, ideal. That this part of the œsophagus is peculiarly subject to pressure is rendered probable by the frequency of carcinoma there. The writer proposes to name these structures "epibronchial pulsion-diverticula," to distinguish them from the more common pharyngo-œsophageal variety.

Morphine Poisoning in an Infant.—C. D. Slagle, M.D. (*Jour. of American Med. Assoc.*, Feb. 15, p. 459).—A female child, aged 27 days, who was suffering from diarrhoea, was given by mistake a powder containing morphine, gr. $\frac{1}{4}$. She became comatose and cyanosed. The pulse was 20, irregular, and weak; the respirations were 4 and stertorous; the pupils were of the size of a

pin-point. $\frac{1}{160}$ gr. of strychnine sulphate and $\frac{1}{40}$ gr. of atropine sulphate were given hypodermically. Hot and cold affusions were given alternately, while the stomach was washed out, first with strong infusion of black coffee, then with warm saline solution. High lavage of the colon was practised with hot normal salt solution. The hot and cold affusions were soon changed to hot and cold baths, to keep up the respirations. As soon as they were stopped the child almost ceased breathing. After an hour she was breathing somewhat more regularly. The pulse was 30, full, and more regular. The hypodermic injection was repeated, and the alternating hot and cold baths were continued. The action of the hot water was very stimulating to the heart, but if the child was held in this bath too long the respirations became slower and almost ceased, and the cyanotic state recurred. On the appearance of the cyanosis the cold bath was substituted and breathing again became more regular. This treatment was continuously followed for 5 hours, then for 2 hours a hot and a cold bath were given every half-hour. At the end of the seventh hour the respirations were 30, but not very regular. The pulse was 120, regular, and weak. The pupils were moderately dilated. The child still slept profoundly, did not utter a sound, and could not be aroused. $\frac{1}{800}$ gr. strychnine sulphate and $\frac{1}{40}$ gr. atropine sulphate were given, and in one hour the pulse became stronger and the respirations more regular, being about 40. The child was placed in charge of the nurse with instructions to give another hot and cold bath should signs of dyspnoea or cyanosis reappear. In about 4 hours, when again seen, she was sleeping; the respirations were 40, full, and regular; the pulse was 140 and fair. Recovery followed.

Recurrent Herpes Zoster.—Mm. Edg. Hirtz and Malomon (*Bulletins de la Soc. Méd. des Hôpitaux*, March 7, p. 206).—It is generally supposed that herpes zoster does not recur—that

one attack confers immunity. On the other hand other forms of herpes frequently recur. However, Alibert admitted that herpes zoster might recur, and recently a number of cases of recurrent herpes zoster has been recorded. M. Matignon has recorded the case of a young man who from childhood was subject to attacks of zona of the ophthalmic nerve, which followed one another almost without interruption 3 or 4 times a year (*Bulletins de la Soc. Méd. des Hôpitaux*, Feb., 1894). Each attack was ushered in by fever and the general symptoms of true zona. More recently Dr. J. Grindon has collected 61 cases of recurring zona (*Journal of Cutaneous and Genito-Urinary Diseases*, 1895, May, p. 191, June, p. 252). Mr. G. Pernet has described the case of a woman who had, in Dec., 1891, right intercostal zona, and in Dec., 1892, Feb., 1896, and Nov., 1896, below the right angle of the lower jaw a group of papules, which passed into vesicles, and were preceded by neuralgic pains in the right side of the head (*Brit. Jour. of Dermatol.*, April, 1897, p. 151). Dr. W. Beatty has recorded the case of a man, aged 35, who had, in July, 1894, pains in the genital region which were followed by vesicles on the scrotum and between some of the toes. Recurrence took place in Feb., 1895, May, 1895, Dec., 1896, and April, 1897 (*ibid.*, July, 1897, p. 268). The writers record the following case:—

A man, aged 67, addicted to alcohol, was admitted to hospital in July, 1901, with pains in, and an eruption on, the right buttocks and thighs which had existed for several days. In 1895 there were similar neuralgic pains which were followed by zona. Since then, about Jan. or Feb. every year, recurrence had taken place. The present attack was the first that occurred in July. The sciatic and crural nerves were tender. On the right buttock were tender erythematous patches covered with vesicles, which were diagnosed as herpes zoster. Recovery took place in a fortnight. In Feb., 1902, the eruption again appeared. On the right buttock were 5 patches, and on the left 2 small ones.

Alcoholic Paralysis of the Upper Limb.—

Jean Gauraud (*Archives de Neurologie*, Feb., p. 97).

—The writer describes 6 cases of an unrecognised form of paralysis of the upper limb which he regards as “hystero-alcoholic.” All the patients were males and well developed, the muscles being particularly large. Their ages varied from 37 to 53 years. All were engaged in laborious occupations and were addicted to alcohol, though up to the onset of the paralysis there had been no neuropathic manifestations, nor was there any history of injury. Two were drunk at the time of onset of the symptoms. In both these cases the paralysis came on during the night, and in the other 4 in the day. In 3 cases the attack occurred suddenly and without premonitory symptoms while the patients were at work. In 1 case it came on slowly after a period of pain in the cervico-dorsal region. The paralysis was generally accompanied by a slight sensation of numbness or tingling in the affected limb. There was never loss of consciousness, vertigo, or severe pain. Except in one of the cases, in which the left side was involved, the paralysis always affected the right upper limb. It was always most marked in the terminal part of the limb—the fingers, hand, or wrist. Sometimes it was confined to the distal part of the arm, the forearm remaining unaffected. In the affected segments all voluntary movements were involved. There were never any signs of paralysis of physiological muscular groups, such as extensors or flexors. The amount of motor impairment varied considerably, some of the patients shewing merely paresis. They could still flex or extend the fingers but were unable to take up small objects, use their tools, or exert continuous pressure. Others were absolutely incapable of moving the fingers or hand. In 5 out of the 6 cases there was marked sensory derangement of segmental distribution. There was anæsthesia or analgesia of the glove, gauntlet, or sleeve type; that is to say, limited to the hand or extending up the forearm to the elbow or to the middle of the upper arm. There was no constant relation

between the extent of sensory and motor paralysis. In one case in which the paralysis was limited to the hand a large area of anæsthesia existed over the whole of the forearm, while in another case the hand was slightly hypoæsthetic although the whole of the forearm was paralysed. There was a marked diminution in perception of the faradic current. Generally it could at first be borne without inconvenience even when the current was strong. After a short interval this lessened perception disappeared, and simultaneously motor power was recovered. But in one case motor paralysis had completely disappeared before sensibility was completely recovered. Notwithstanding such sensory perturbation all the patients retained the stereognostic sense. Sense of position was also unaffected. The visual fields were examined in 5 out of the 6 cases and in 4 there was concentric diminution. The contraction was equal for each field and was reduced to about half in normal area. In the majority of cases no vaso-motor or secretory derangement could be detected, but in one instance there was slight coldness of the hand, and in another marked increase of perspiration.

The treatment employed was brisk faradisation of the paralysed limb, which succeeded admirably. When the duration was from 2 to 4 days a single application of faradism was sufficient, when of some weeks, 3 or 4 applications were required. Hence the importance of early diagnosis. Cases of this kind do not seem to be generally recognised. The writer considers them hysterical and in this view is supported by Pitres.

CASE 1.—A man, aged 37, who gave no history of nervous disease, indulged in alcohol. He went to bed completely drunk. On waking next morning he was unable to use his right hand, flexion and extension being lost. The movements of the forearm and upper arm were retained. There was no pain or tingling. The hand was in a semi-flexed position and a little colder than the left. There was no swelling or cedema. He could not unbutton his clothes. In the right forearm from the bend of the elbow to the wrist on the anterior

aspect, and from a similar point above to the line of the metacarpo-phalangeal articulations on the posterior aspect was a segment of anæsthesia to touch, pricking, and heat. This area was limited above and below by a well marked line of demarcation. On the anterior aspect of the hand and fingers sensibility was normal as it was on the posterior aspect of the fingers. The visual fields were contracted. Faradisation was applied for a quarter of an hour, when sensibility in the forearm and the movements of the fingers were regained.

CASE 2.—A man, aged 42, a stoker, was admitted to hospital. He had always been in good health and did not often take alcohol to excess though he took it freely. Eighteen days previously he was drunk. Next morning his right hand and arm were weak and could be moved with difficulty. This condition increased up to the time of admission. On examination flexor movements of the hand and forearm had almost disappeared, but extensor movements were still present. Sensibility was also affected, being diminished up to the bend of the elbow, where there was a sharp line between the affected portion and the normal. Sensibility to heat seemed unaffected. After quarter of an hour's faradisation sensation became normal, but the muscular weakness continued. A second sitting on the following day was followed by partial restoration of movement, a third completed the cure. The remaining 4 cases were similar.

The Causes of Acute Enlargement of the Spleen in Intoxications and Acute Infectious Fevers.—G. Jawein (*Virchow's Archiv*, Bd. 161, Hft. 3, p. 461).—Many theories have been propounded to explain why in some infectious diseases the spleen is enlarged and in others not. Jawein found that if large doses of sodium or potassium chlorate were given to dogs the resulting splenic enlargement was directly proportional to the number of red blood corpuscles which had been destroyed by the poison. Thus a decrease of 1

million erythrocytes in the c.mm. corresponded to a spleen twice, and a decrease of 3 millions to one 5 times its normal size. In rabbits, potassium chlorate does not disintegrate the blood, and its administration causes the spleen to shrink rather than to enlarge. The splenic enlargement in dogs is therefore not due to any specific action on the spleen or splenic nerves. The varying degree of enlargement in different dogs probably depends on the varying effect of a given dose on the blood. Results similar in every respect were obtained with another blood-poison—toluylendiamin. The splenic enlargement is, therefore, due to the spleen seizing on all the disintegrated corpuscles; this functional activity produces secondary hyperæmia and hyperplasia. All reported cases of poisoning in which the condition of the spleen is noted support this view.

The following conclusions may be drawn:—

- (1) In cases of poisoning, splenic enlargement is present only if the poison disintegrates the red corpuscles.
- (2) Substances which merely destroy the power of the red corpuscles to take up and give off oxygen, as by the formation of methæmoglobin, do not produce splenic enlargement.
- (3) If a blood poison kills by its action on the respiration, heart, or nervous system, before hæmolysis occurs, no splenic tumour is found.
- (4) If the poison is not fatal the splenic enlargement subsides as soon as hæmolysis ceases.
- (5) Poisons which act exclusively on the nervous system or the gastro-intestinal tract, *i.e.*, which are not blood poisons, never cause enlargement of the spleen.
- (6) In chronic poisoning an enlarged spleen is never present unless there is rapidly progressing anæmia. The products of disintegration of red corpuscles are seized upon by the cells of the splenic pulp, which they probably stimulate to increased activity. Hyperæmia, hypertrophy, and hyperplasia are the consequences. In infectious fevers there is no splenic enlargement without destruction of red corpuscles. In malaria enormous numbers are destroyed; and in typhoid, recurrent,

and typhus fevers, influenza, and anthrax destruction occurs during the stage of splenic enlargement. The relation between hæmolysis and splenic tumour may throw some light on the etiology of different forms of anæmia. Thus the presence of a tumour would indicate blood dissolution, its absence deficient blood formation. In chlorosis there is usually no splenic enlargement, and except in extreme cases there is deficient formation rather than destruction of blood. The same is true of the anæmia of tuberculosis and carcinoma. In pernicious anæmia there is usually no splenic enlargement, because, on the writer's hypothesis, it is primarily a disease of the hæmopoietic system; the appearance of a splenic tumour proves that there is also rapid destruction of erythrocytes. In health the spleen probably eliminates the dead hæmic elements, just as in disease. For (1) if it is resected numerous microcytes (dying erythrocytes) appear; (2) animals bear hæmolytic poisons especially badly after splenectomy; and (3) the splenic arteries communicate directly with the pulp, so that its cells have every opportunity to retain and destroy abnormal or dead corpuscles.

Post-Scarlatinal Gangrene.—R. Seubert (*Münch. Med. Woch.*, Jan. 14, p. 66).—A girl, aged 7, had an ordinary attack of scarlet fever. Some days after the beginning of desquamation the left leg suddenly swelled and pyrexia appeared. The whole limb was cold and so swollen that the skin was tightly stretched over it. The knee joint was flexed. On the anterior surface of the thigh was a bluish-red discolouration of the skin of the size of a man's hand, over which were several bullæ. There were several similar, but smaller patches on the leg and back of the thigh, and the toes and dorsal surface of the foot were discoloured. The limb was exquisitely tender. An exploring syringe drew off serous fluid. No pulsation was present in the femoral artery. The left labium majus was

slightly œdematous. The heart and other organs were normal, and the urine contained neither sugar nor albumin. A fortnight later almost the entire skin of the left lower limb had sloughed and was separating from the underlying tissues. The only normal skin left was in the region of the knee. The toes were black and in parts mummified. The left inguinal glands were enlarged. The limb was amputated, but the flaps extensively sloughed. Four days after the operation the right lower limb became œdematous, but the œdema subsided with elevation. Recovery followed. The muscles of the amputated limb were œdematous and yellow, and all the vessels—arteries and veins—were plugged with purulent thrombi, containing streptococci.

Gangrene of the extremities is not common after infective fevers, and appears to be especially rare after scarlet fever.

See also "REVIEW," Vol. IV., p. 690.

Atrophy of the Gastric Mucosa in Chronic Interstitial Nephritis.—W. Vierhuff (*St. Petersburg. Med. Woch.*, No. 38, 1901, p. 425).—A woman, aged 60, was admitted to hospital on Jan. 8, 1901. Fifteen years previously she had several attacks of renal colic. For a year she had been losing strength, and had had dyspeptic symptoms, which prevented her taking more than liquid nourishment. There were diarrhoea, vomiting, headache, and vertigo. The urine was clear and of s.g. 1009 and contained a quantity of albumen. There was no œdema. A test breakfast was given, and the contents of the stomach were removed an hour later. They contained undigested fragments of bread. Free HCl, rennet ferment, and lactic acid were absent. Death occurred on Jan. 21. The left kidney was contracted and contained numerous calculi and gravel. One large calculus formed a complete cast of the renal pelvis. The cortex was absent. The right kidney contained numerous cysts and calculi. The cortex and parenchyma could not

be differentiated, and renal tissue was largely replaced by fibrous. The lining of the stomach was thin, glistening, and almost devoid of rugæ. The glands were atrophied and in places absent.

The gastric atrophy was not senile, for no other senile changes were present. It was secondary to the chronic nephritis and consequent toxæmia, which injure the gastric muscosa, just as they may the mucous membrane of the intestines and lead to ulceration ("REVIEW," p. 139). The suppression of the secretion of HCl in carcinoma and diabetes, and possibly in tuberculosis and pernicious anæmia, is likewise due to the action of toxins.

Embolism of the Superior Mesenteric Artery.—R. Sievers (*Berlin. Klin. Woch.*, March 3, p. 183).—A woman, aged 56, was admitted to hospital on Oct. 17. She had always been healthy up to her fiftieth year, when she began to suffer from vague pains and dyspepsia. Six months before admission dyspnœa, cough, and œdema of the legs appeared. There were dulness below the middle of the left scapula and in the axilla, slight ascites, and albuminuria. Under strophanthus and diuretin there was considerable improvement. On Dec. 22, while defæcating, she was suddenly seized with severe abdominal pain. The abdomen was slightly tympanitic and diffusely tender. There were nausea, vomiting of moderate severity, and tenesmus unaccompanied by the passage of fæces or blood. Progressive asthenia terminated in death 29 hours after the first seizure.

NECROPSY.—The dulness over the left side of the thorax was due to an aneurysm of the descending aorta opposite the fourth and fifth dorsal vertebræ, which was of the size of a man's fist and had compressed the left lung. A little serous fluid was found in the left pleural cavity. There was an embolus 2½ in. long in the superior mesenteric artery, immediately beyond its origin. The intestines, from 39 in. below

the pylorus to 27½ in. below the ileo-cæcal valve, were uniformly reddened and succulent. They were moderately distended and contained a brownish-red fluid. The superior mesenteric artery supplies the whole of the small intestine beyond the duodenum and half of the large intestine through its jejunal, iliac, ileo-colic, right colic, and middle colic branches. The whole area supplied with the exception of the upper part of the jejunum was affected. The only part of the gastro-intestinal tract unaffected were the stomach, duodenum, upper part of the jejunum, and lower part of the descending colon. The changes were such as occur in infarct of a terminal artery. Though the superior mesenteric artery communicates with the left colic branch of the inferior mesenteric artery below and the celiac axis above, it is functionally an end-artery, for the anastomoses are insufficient to restore the circulation in the whole length of the infarct, which practically includes the whole of the intestine.

The symptoms of embolism of the mesenteric arteries are indefinite. Most writers mention 2 groups—one in which the most prominent symptom is intestinal hæmorrhage, the other in which the symptoms are those of obstruction. This case belongs to the latter category. The ileus is due to intestinal paralysis. Unless external hæmorrhage occurs recognition of the embolism during life is probably impossible.

See "REVIEW," Vol. I., p. 123., and Vol. II., p. 221.

Suprarenal Diabetes.—L. Metzger (*Münch. Med. Woch.*, March 25, p. 478).—Blum has recently shown that a substance is constantly present in the suprarenal glands which on entering the circulation produces glycosuria (*Deutsch. Arch. f. Klin. Med.*, Bd. lxx.), and his results have been confirmed by Zuelzer (*Berlin. Klin. Woch.*, 1901, No. 48). After the administration of phloridzin the percentage of sugar in the blood is not increased, even after bilateral nephrectomy. This shows that phloridzin-diabetes is of renal

origin. On the other hand in glycosuria of "cis-renal" origin, *i.e.* such as occurs after resection of the pancreas the circulating sugar is increased. The percentage of sugar in the blood is, therefore, an indication of the nature of a glycosuria. Both Zuelzer's and the writer's experiments on animals prove conclusively that the injection of suprarenal extract constantly produces hyperglycæmia, which is of "cis-renal" and not of renal origin. Whether the toxic suprarenal substance acts on the liver or pancreas is uncertain. Zuelzer advocates the former view, the writer the latter; for Blum has shown that the injection of suprarenal extract may produce considerable glycosuria though the liver contains no glycogen. Probably the function of the pancreatic cells is inhibited.

Diabetes Simulating Gastro-Intestinal Disease.—Emil Schütz (*Wien. Med. Woch.*, May 18, 1901, p. 969, and May 25, p. 1015).—Cases of diabetes occur in which gastro-intestinal symptoms are so prominent that if examination of the urine is neglected they will probably be mistaken for some disease of the stomach or intestines. There are 3 chief types of diabetic cases with gastro-intestinal symptoms: (1) those in which gastric crises such as occur in locomotor ataxy are present; the writer has seen 2 such cases. The diagnosis from tabes may be difficult, for in diabetes, as in tabes, the patellar reflex may be absent, and neuralgic pains and paræsthesiæ be present, while diabetes may complicate locomotor ataxy. (2) Those in which gastralgia and intestinal colic are common. Occasionally the gastro-intestinal symptoms alternate with attacks of neuralgia in other parts. The colic may occasionally be of pancreatic origin. (3) Those in which the symptoms are

those of dyspepsia in general, especially anorexia and constipation. There is usually some gastric motor insufficiency. The gastro-intestinal symptoms are invariably improved by anti-diabetic treatment.

Hypertrophy of the Thymus and Death under Chloroform.—Dr. Laqueur (*La Tribune Médicale*, March 5, p. 184).—A boy, after inhaling about 30 drops of chloroform, suddenly died. Chemical examination showed the chloroform to be pure. The necropsy revealed hypertrophy of the thymus, and of the follicles at the base of the tongue and an enlarged spleen. Kundrat has collected 12 similar cases in which a necropsy was performed. Hypertrophy of the thymus was observed in all, hypertrophy of the follicles of the base of the tongue and of the posterior wall of the pharynx in 10, hypertrophy of the spleen in 7. Sometimes there was also enlargement of the tonsils, bronchial glands, Peyer's patches or cervical and inguinal glands. This hyperplasia has also been found in cases of sudden death under ether, after an injection of saline solution or other fluid, and after a cold bath. In all these cases the only lesion found (even in adults) was considerable hypertrophy of the thymus with hyperplasia of other lymphoid organs. To such persons the administration of chloroform is dangerous. For the diagnosis of hypertrophy of the thymus percussion over the sternum does not always give accurate information. (See "REVIEW" Vol. IV., p. 359.) The writer says that if the lymphoid follicles of the base of the tongue and posterior wall of the pharynx are enlarged there is certainly hypertrophy of the thymus and chloroform is contra-indicated.

See also "The Lymphatic Constitution," "REVIEW," p. 280.

THERAPEUTICS.

Tabes with Acutely Developed Ataxia: Great Improvement from Frenkel's Treatment.

—Dr. Byrom Bramwell (*Lancet*, Mar. 29, p. 891).—A man, aged 35, was admitted to hospital on Jan. 22, 1902, because of inability to walk. He had enjoyed good health until the present illness commenced. He denied having had syphilis. For 6 months before the inability to walk developed there were slight shooting pains in the legs. He had occasionally experienced a dull pain in the back and a little difficulty in micturition, having no "force." The inability to walk developed rapidly on Jan. 23, 1902. For a fortnight before he had felt some stiffness and "pins and needles" in his legs and feet. On Jan. 12 he walked 3 miles. On the 13th he had great difficulty in walking from one room to another, and on the 14th he was quite unable to stand or to walk.

The inability to stand or walk was due to ataxia. The muscles of the legs were well developed but the movements were wildly ataxic. When the eyes were closed there was total loss of the sense of position, both during and after passive movements, in the lower limbs. Occasional lightning pains were complained of in the legs. The knee and Achillis-jerks were absent, even after reinforcement; the deep reflexes in the upper limbs were present. The direct muscular excitability of the anterior and posterior muscles of the leg and of the quadriceps group was slightly increased. The plantar reflexes were very active; the cremasteric reflexes were absent; the abdominal reflex was present but slight. The pupils were unequal and markedly dilated; the right measured 8 mm. and the left 10 mm.; they were insensible to light and only contracted slightly on accommodation, the right becoming

6 mm. and the left 8 mm. in size. There were well-marked thoracic and ulnar analgesia and considerable analgesia and anæsthesia of the lower limbs. There was also marked analgesia of the muscles of the calf. On Jan. 22 the patient was unable to stand or walk, the movements of the legs being wildly ataxic. Frenkel's treatment (see "REVIEW," Vol. IV., p. 615) was commenced on the 27th. On Feb. 7 he was able to stand and to walk with the help of a go-cart. On the 14th he was able to walk with two sticks. On March 5 he could walk steadily and well with sticks and could walk across the room fairly well without them.

The case is interesting because of the following features:—(1.) The rapid development of the ataxia. (2.) The mydriasis. The writer has analysed the condition of the pupils in 104 cases of tabes. In 69 or 66·3 per cent. the pupils were contracted (below 3 mm.); in 27 or 25·9 per cent. they were of medium size (between 5 and 3 mm.); and in only 8 or 7·6 per cent. were they dilated (above 5 mm.). (3.) The rapid improvement which resulted from Frenkel's treatment.

Treatment of Gastro-Intestinal Hæmorrhage in the Newly-born with Suprarenal Extract.

—L. Emmett Holt, M.D. (*Archives of Pediatrics*, April, p. 278).—A big well-developed infant, weighing 9 lb., was born after a natural labour. For the first 16 hours it appeared to be quite normal. It then began to vomit blood at intervals of a few minutes until the writer saw it about 8 hours after the beginning of the symptoms. It was the fifth child; the first was still-born; the second and third were alive and

well; the fourth had hemorrhage from the second day after birth until death on the fourth day. There was no suspicion of syphilis in either of the parents.

There were fine petechiæ on the neck and upper chest, and one larger hæmorrhage on the left shoulder, and many minute punctate hæmorrhages on the mucous membrane of the mouth. From a few drops to a tea-spoonful of blood were vomited, most of it, was of a dark-brown coffee-colour and was mixed with mucus. Three or four large towels were shown which were covered with this material. The bowels had acted 3 or 4 times, the discharge being a little darker than normal meconium. The general condition of the child was excellent. It was strong and vigorous, the heart and lungs were normal, and there was no umbilical hæmorrhage. The hæmorrhage seemed to come from the stomach. One grain of saccharated suprarenal extract was given every hour for 6 or 8 hours, after which the dose was reduced to half the quantity, and the intervals were prolonged on account of the difficulty in swallowing, which arose from the astringent effect upon the pharynx and œsophagus. Twelve hours after beginning the treatment the hæmorrhages ceased. The child began to take food. By the fifth day the petechiæ on the skin and in the mouth had disappeared. In all the child took 12 gr. of the extract, of which 10 were retained. The entire period of the hæmorrhages was about 30 hours.

The treatment of severe gastro-intestinal hæmorrhages in the newly-born is most unsatisfactory. Occasionally recovery takes place without active treatment, but most cases go from bad to worse, and even children previously robust usually succumb after 2 or 3 days. The writer refers to another case. The child began bleeding at the age of 2 days. One gr. of the extract was given every hour. The gastro-intestinal hæmorrhage was controlled, but there was extreme bleeding beneath the skin and possibly a meningeal hæmorrhage, for the fontanelle

bulged much. Convulsions and death followed. In such a condition a fatal result was inevitable under any treatment.

The solution of the active principle, adrenalin, is possibly to be preferred for internal use to the powder, as one gr. of the extract is a rather large dose for a young infant. Whether there is any marked effect upon general hæmorrhages is problematical, but the local effect seems to be proved.

Inoperable Cancer: Benefit from Oöphorectomy and Thyroid Feeding.—

Walter Edmunds, F.R.C.S. (*Lancet*, March 29, p. 888).—A married woman, aged 36, had noticed for 2 years a tumour in the left breast. On operation (in 1894) it was found to be a carcinoma, and one at least of the lymphatic glands was involved. The breast and axillary glands were removed. Fifteen months later the growth recurred and was excised. Except for one or two minute recurrences which were removed under cocaine the patient continued well till Oct., 1899, when she became extremely ill with symptoms of intra-thoracic growth and bronchitis. There was also a growth in the right breast. The bronchitis improved, but she remained very weak and emaciated, and suffered from dyspnœa on exertion and asthmatic attacks. In Jan., 1901, there were a tumour in the right breast, enlargement of the axillary glands, and a small flat tumour in the skin behind the left ear. She complained of shortness of breath and attacks of dyspnœa at night. There was bilateral stridor. The chest was fairly resonant save at the left base, where the vocal fremitus was diminished. There was still, therefore, clear evidence of intra-thoracic pressure. The catamenia had ceased during the illness in Oct., 1899, and had not reappeared.

Oöphorectomy was performed on March 11, 1901. One ovary was atrophic, the other normal. Thyroid feeding was commenced early. On March 26 (15 days after

the operation) the tumour in the breast and that behind the ear were both thought to be smaller. On May 14 she was much better and stronger. The tumour in the right breast and the glands in the axilla had almost disappeared, the growth behind the left ear was also much smaller, and the stridor had ceased. The breath sounds over the right lung were harsh, over the left lung faint.

On Mar. 4, 1902, she had gained flesh, become much stronger, been nearly free from dyspnoea, and was quite a different woman. There was a small tumour in the right breast (the patient said that at one time it had completely disappeared), and a lymphatic cord could be felt running up towards the axilla, but there were no enlarged glands in the axilla and the small growth behind the ear had disappeared. The signs in the chest were practically unaltered since May, 1901—2 months after the operation. The thyroid-feeding was continued regularly for 4 months after the oöphorectomy and irregularly up to the present time.

Whatever may be the future history the great benefit which has been enjoyed for a year entirely justified the operation. As both oöphorectomy and thyroid feeding were had recourse to, this case throws no light on their relative efficiency, but Mr. Stanley Boyd gave no thyroid in his cases ("REVIEW," Vol. II., p. 131). Mr. F. Page and Dr. W. H. Bishop, however, have recorded a case in which thyroid feeding alone did much good, and in a recent paper, by Mr. A. M. Sheild, reference is made to another case in which great relief followed thyroid feeding without oöphorectomy. In cancer of the uterus Dr. R. Bell, of Glasgow, has recorded 2 cases cured or greatly benefited by thyroid treatment, and quite recently Dr. H. A. Beaver another case. Occasionally in cancer of the breast recurrence occurs only very late—in one case 11 years after the original operation. One explanation is that a focus of disease lies dormant till stimulated into activity by some change in the metabolism of the body,

in which the partial atrophy of the thyroid, which occurs with advancing years, may be a factor. It would therefore be rash to conclude that thyroid feeding in these cases is useless.

Treatment of Incontinence of Urine in Females by Applying Nitrate of Silver to the Urethra.—G. C. Parnell, M.R.C.S. (*Brit. Med. Jour.*, Jan. 11, p. 72).—The writer's treatment consists in the application of a strong solution of silver nitrate to the neck of the bladder and urethra. Sir Henry Thompson has recommended in obstinate cases the application of a solution of nitrate of silver (gr. 10 ad. oz.) to the neck of the bladder.

CASE 1.—A girl, aged 18, had incontinence by day and night since the age of 8. She had been under many doctors and gone from hospital to hospital. A solution of silver nitrate (gr. 30 ad. 1 oz.) was applied to the urethra with a probe armed with cotton. During the 3 following days there was no incontinence. The application was repeated on the fourth day, and again at the end of a week. A year afterwards there had been no recurrence. There was no evidence of hysteria.

CASE 2.—A child, aged 14, had suffered by day since the age of 4. She had been under treatment at various hospitals. After applications on Dec. 8 and 15, 1899, she was continent for 2 months. She then had occasional relapses, but no precautions had been taken to guard against them.

Ichthyol in Pulmonary Tuberculosis.—Dr. J. D. Astrachan (*Allgem. Med. Cent. Zeit.*, March 1, p. 206) has used ichthyol in 21 cases of pulmonary tuberculosis. Most of the patients were very poor and had to work hard for a bare living, a fact which he thinks is a great test of the efficacy of any remedy. The patients' ages varied from 22 to 50 years. Two were in the earliest stages of phthisis, 10 had had the disease for 3 or 5 years, 4 for 5 to 7 years, 1 for 13 years,

while 2 had "galloping" consumption, and 2 had chronic bronchitis with tuberculous heredity. The writer prefers the ammoniate of ichthyol and the sulphoichthyolate of soda, which he prescribes in pill form with magnesia. Each pill contains 12 cgm. of ichthyol, and the dose is gradually increased from 1 pill to 8 thrice daily. He also uses a mixture of ichthyol with an equal quantity of water and glycerine; of this he gives 4 drops thrice daily, gradually increasing the dose to 30 drops thrice daily. In 2 cases all subjective symptoms disappeared, and the patients became apparently well. The 2 patients with galloping consumption were not benefited. In 6 cases there was an increase in weight varying from 4 to 32 lb.; in 5 cases out of 6 the hæmoptysis ceased. Night-sweats, which were sometimes profuse, ceased completely in 7 cases, and diminished greatly in 12. Eighteen of the patients stated that their voices were better, their appetites increased, the action of the bowels became normal, the sense of oppression in the chest left them, and there was a diminution or cessation of cough. In 4 cases the purulent expectoration ceased absolutely. On examination there was a marked diminution of rhonchi, and the areas of dulness were diminished. The writer's impression is that the ichthyol arrests the disease, and helps to resist it. It improves the patient's general condition and sometimes lessens, sometimes abolishes the most distressing symptoms.

painful. On Dec. 24 there were polyadenitis at the right maxillary angle and on the right pillar of the fauces a deep ulcer looking like a chancre and surrounded by intense erythema. The diagnosis of Vincent's angina was confirmed by bacteriological examination. Finely powdered pure methylene blue was applied to the ulcer, which was later washed with boiled water. Three hours after the first application the patient felt relieved, and could swallow. The ulceration was still grey but manifestly healing. A second application was made 6 hours later. After the third day's treatment there was neither fever nor dysphagia, and the cervical glands were less tender. The mouth was clean and the saliva was normal. This treatment gives good and rapid results in other buccal inflammations and ulcerations.

The Seton in Migraine and Allied Affections.—T. Fenton, M.D. (*Brit. Med. Jour.*, Mar. 8, p. 587).—A young woman had suffered for a considerable time from paroxysmal hemicrania, and pain in the lower jaw, neck, and arm of the same side. She was of a highly neurotic temperament, many of the teeth had been removed which gave only temporary relief. All kinds of medical treatment had been tried without permanent benefit. The remaining teeth were sound, the eyes and ears were normal. A seton as suggested by Mr. Whitehead ("Review," Vol. IV., p. 368) was inserted into the back of the neck in Feb. The duration of the attacks and the severity of the pains soon diminished. After it had been worn 9 weeks it was removed, the patient declaring herself well. On return of the attacks, a second seton was introduced on Aug. 22, and was worn 4 months. There has been no pain for upwards of 3 months and the patient now does housework, which she was unable to do for several years.

Methylene Blue in Vincent's Angina.—Chauffard, M.A. (*Bulletins de la Soc. Méd. des. Hôp.*, 1901, p. 1375).—On Dec. 8 a woman, aged 24, complained of sore throat, which was worse during deglutition. Seven days later dysphagia and fever appeared. In spite of antiseptic gargles, the saliva and expectoration became fetid and purulent, and the fauces were intensely

SURGERY.

The Operative Treatment of Fractures near the Elbow-Joint.—W. Arbuthnot Lane, M.S. (*Edinburgh Med. Jour.*, April, p. 328).

CASE 1.—Fig. 1 represents a compound fracture of the lower end of the humerus, which came under care several days after the injury. It was produced by a fall from a horse. The skin and soft parts over the fracture were lacerated and fouled, and the fragments of the bone projected outwards. The damage to the bone was too extensive for other measures than wiring. The seat of fracture was freely exposed, and extensive comminution was found. The condition shown in the radiograph was the best that could be obtained after much manipulation, and, evidently, if something were not done to restore the continuity of the humerus, the patient, an officer, would have to resign his commission. As the comminuted fragments were so much crushed and separated accurate apposition was difficult, and the drilling and wiring were troublesome. The truncated lower extremity of the upper portion of the humerus was finally fitted and sutured more or less firmly into the interval between the lower fragments. The result is shown in Fig. 2. The range of flexion and extension was not complete, but the angle through which the forearm could be moved upon the humerus was sufficient to allow the patient to take active service. The radiograph, being taken laterally, gives no idea of the size of the wire loops.

CASE 2.—A man was thrown from his horse, which trod on the outer aspect of the right elbow. There was some fracture of the head of the radius, which interfered with flexion and extension of the forearm, and almost absolutely prevented pronation and supination. The radiograph (Fig. 3) shows that a portion of the

outer and anterior segment of the head of the radius had been broken off and displaced forwards. If the fragment were left in this position flexion and extension would be very limited, and probably pronation and supination would be lost. The treatment rested between excision of the fragment and of the rest of the head of the radius, and uniting the broken piece to the radius. The writer cut down on the radio-humeral joint and divided the orbicular ligament vertically, separating its segments widely. The detached fragment was fitted accurately into its position and wired there by means of fine virgin silver wire. The cut ends of the orbicular ligament were sutured together, and the wound was closed. Progress was satisfactory. After 3 weeks, flexion and extension were commenced, and were steadily increased. Later, pronation and supination were attempted. After a moderate range of movement resistance was experienced. The result was, that while flexion and extension were almost perfect pronation and supination were far from so. The patient can now play cricket and shoot as well as before the accident. A radiograph showed that some slight displacement of the fragments had ensued subsequent to the operation, probably from the writer attempting to rotate the bones on one another before union was sufficiently strong to resist the strain of adhesions between the opposing surfaces of radius and ulna. He thinks that he would have ensured a perfect result if he had delayed movement longer, as possibly cartilaginous surfaces take a longer time to unite firmly together than bone. Although what the patient considered a perfectly useful arm was obtained, the writer wondered whether it would not have been wiser to excise the remainder of the head of the radius. This he did in the following case.



FIG. 1.



FIG. 2.



FIG. 3.



FIG. 4.



FIG. 5.



FIG. 6.



FIG. 7.

CASE 3.—A man was thrown heavily off his bicycle, falling upon his hand, with the arm extended. Radiography showed a fracture of the head of the radius, the anterior half of which had been broken off vertically (Fig. 4). It was displaced forwards so as to render the arm quite useless unless some operation was performed. Accordingly the seat of fracture was freely exposed. Owing to much laceration of the soft parts and to some irregularity of the margins of the bones perfect apposition was very difficult, therefore, the remainder of the head of the bone was removed. Recovery of movement was much slower and more painful than in the last case. The result after about 2 years was that pronation and supination were almost perfect and powerful. Extension was nearly complete, flexion was limited to 90° , the resistance being apparently in the soft parts posterior to the joint. He played golf, etc., with ease, and was quite satisfied with the articulation. On the whole, the mechanical result was not as good as that obtained by restoring the head of the radius to its normal form. In future, unless there is some serious obstacle, the writer intends to unite the fragment, and not attempt movement till union is perfect.

CASE 4.—Fig. 5 represents a condition common in children. There was considerable outward, with some backward displacement of the lower epiphysis of the humerus. About 16 days had elapsed since the injury. The amount of displacement and the length of the interval made the operation much more difficult than usual. The seat of fracture was freely exposed on its inner aspect, and there was much difficulty in replacing the fragment, a position which was not quite perfect. It was fixed by a wire passing through the inner limit of the shaft. The range of movement of the elbow-joint and the relationship of the bones of the forearm to the humerus seemed perfect. Progress was satisfactory.

As a rule, in this form of fracture an excellent working result with but a slight amount of

deformity is obtained, if the arm be put up at once in a position of extreme flexion. Operative interference is often very difficult and sometimes unsatisfactory in young children, because of the cartilaginous condition of the fragment, which renders securing it in position without leaving a foreign body projecting into the cavity of the joint very difficult. It is the outward rather than the backward displacement that renders replacement difficult in some of these cases.

Another fracture near the elbow-joint that frequently requires operation, especially in early life, is that of the radius in the upper part of its shaft. Operations are rarely performed at the time of injury: the operator first sees the patient after the splints have been removed. The arm is put up on an internal angular splint, with the forearm midway between pronation and supination, the hand being placed vertically, the thumb upwards. When this splint is taken off supination and pronation are found impossible. The mechanical depreciation, if at all marked, is sufficient to unfit the child for many occupations. Such cases require very careful operative treatment, since to restore the axes of the bone to their normal relationship the radius has to be divided in two oblique planes, which usually cross each other at an angle of about 90° . When the radius alone is broken a radiograph shows very little unless it is compared with one of the other arm.

CASE 5 (Fig. 6).—There was besides the fracture of the radius with much displacement of fragments, a fracture of the ulna in 2 places. This case came under the writer's care 3 months after the injury, when the arm was quite useless. The presence of an abundance of callus and the change in texture which the ends of the fragments had undergone, rendered operative measures difficult and tedious. The bones were restored almost perfectly to the normal form but very extensive incisions had to be made.

CASE 6.—Fig. 7 shows a fracture which is by no means uncommon though not often recognised.

An officer was thrown off his horse, and dislocated both bones of the forearm backwards. The dislocation was reduced, and he was directed to move the elbow-joint freely. He was unable to do so, the arm being kept rigidly flexed at a right angle. He was regarded as neurotic, and, being unfit to continue on active service, was invalided home from South Africa. Examination showed that flexion was opposed by a hard bony mass, which projected forward in the situation of the coronoid process, while extension appeared to be affected by the lump of bone being situated in or beneath the brachialis anticus. Radiography confirmed this diagnosis, and showed that the apex of the coronoid process had been broken off, and that an abundance of callus had formed about the displaced fragments and about the broken surface of the coronoid process. If the fracture had been recognised at the time of the injury it could have been treated perfectly and simply by screwing on the detached fragments. The writer had to content himself with excising the fragment and callus. A long time elapsed before the muscles and ligaments were sufficiently stretched and resilient to allow spontaneous and painless movement of full range. This case well illustrates the advantage of a scientific operative treatment of fractures, over the old feeble methods. If this patient had been submitted to a simple operation, in the first instance, he would in all probability have been able to resume his duties in 6 weeks, at most, after a painless convalescence. Instead he was lost to the service for at least a year, and his health was seriously affected by the pain endured in the attempts to obtain movement before and after operation.

In operating on these cases there are two very important rules:—(1) Make a sufficiently long incision. The length of incision adds nothing to the risks, provided no important structure is cut, and it enables the surgeon to thoroughly expose the fragments and bring and retain them in accurate apposition without offending the second rule, which is, (2) Keep your fingers out of the

wound. If these two simple rules were observed no more would be heard of difficulties in the use of screws in recent fractures, of their not holding or working loose and having to be removed, or of inability to bring the fragments into accurate apposition. The writer has seen radiographs in which the screws perforated fragments not in accurate apposition but overlapping one another. What could be gained by such a procedure? In the treatment of fractures by splints every case when put up should be carefully examined on the screen and radiographed in the worst position.

Fatal Hæmorrhage after Tonsillotomy: Formation of a Gaseous Abscess after the Injection of Gelatine.—N. Damianos and A. Hermann (*Wien. Klin. Woch.*, Feb. 27, p. 225).—A man, aged 23, was admitted into Prof. v. Mosetig-Moorhof's clinic at 6.30 p.m., on Oct. 9, for hæmorrhage from the right tonsil, which had been removed by a tonsillotome at noon. The hæmorrhage, at first slight, had become alarming about 1½ hours after the operation, and continued in spite of digital compression, the application of ice, perchloride of iron, the cautery, and pressure forceps. The cut surface of the tonsil was about 2 in. in length. A piece of iodoform gauze powdered with ferripyrin was applied to the bleeding surface, and pressure was continued between a finger in the mouth and the hand at the external angle of the jaw for 1½ hours. The hæmorrhage ceased, the patient was put to bed, ice was applied to the neck and ergotin was injected hypodermically. One hour later hæmorrhage recurred, but was arrested by pressure forceps. Next morning these were removed, and there was no further hæmorrhage for 3 days. On the evening of Oct. 13 fresh hæmorrhage necessitated the application of pressure forceps, which were left in position for 24 hours; when removed, on Oct. 14, there was no bleeding, but the wound was covered with a black cloth. On the morning of

Oct. 14 100 gm. of a 2 per cent. solution of gelatine were injected under the skin of the right thigh. The temperature rose to 101.3° . On Oct. 16 there was further hæmorrhage, which was easily controlled by pressure forceps and the injection of 100 gm. of the gelatine solution into the left thigh. On the evening of Oct. 17 pressure forceps were again applied for hæmorrhage, and an injection of 200 gm. of the same solution of gelatine was given in the right thigh somewhat above the level of the first injection. Next morning the hæmorrhage had ceased and the forceps were removed. The skin behind the angle of the jaw, where pressure had been made, was discoloured, and on Oct. 19 a cervico-pharyngeal fistula appeared, through which fluid escaped on swallowing. There had been no hæmorrhage for 2 days, and the general condition was improving. On Oct. 20, 3 days after the last injection, the right thigh became painful, and the skin round the needle track was inflamed. The temperature was 99.8° . On Oct. 23 the pain was less, but the skin was raised and a splashing sound was obtained on pressure, so that a subcutaneous collection of air and fluid was diagnosed. During the night of the 23rd and 24th, after immunity from hæmorrhage since Oct. 17, the patient coughed, and within a few minutes lost about 35 oz. of bright blood. The bleeding was arrested temporarily by digital pressure, but recurred to a less extent during the night. Next morning, under Schleich's local anæsthesia, the common carotid artery was ligatured in two places and divided. It was proposed to ligature the external carotid, but this was given off abnormally high in a part obscured by the infiltration of the submaxillary region. The femoral abscess was incised and yielded purulent fluid and gas. Ligature of the carotid did not produce any cerebral symptoms, but there were increasing weakness, somnolence, and an imperceptible pulse. Death occurred at 4.30 p.m. on Oct. 24, 16 days after the removal of the tonsil. The man had always bled readily,

and frequently suffered from epistaxis. The urine was normal.

Post mortem it was found that the tonsil had been removed so thoroughly, that the wound presented a funnel-shaped depression towards the submaxillary region. In its base was a small eroded branch of the facial artery, which was immediately external to the tonsillar wound. The left tonsil was enlarged and had not been removed. The discharge from the femoral abscess contained anaërobic gas-producing bacilli with rounded ends, which stained by Gram's method, and were probably identical with those described by Fraenkel and others as the cause of *gangrène foudroyante*.

The writers have collected 150 cases of severe hæmorrhage following tonsillotomy, published during the last 60 years. Of these only 7 ended fatally. A history of hæmophilia was exceptional, and the origin of the hæmorrhage was usually a divided artery. The origin of the tonsillar branches is subject to great variation. The greater number usually spring from the ascending palatine. They penetrate the tough fibrous capsule on the outer wall of the tonsil, and on reaching its parenchyma divide into thread-like bundles. An incision through the parenchyma of the tonsil, therefore, divides only minute vessels; an incision further out in the plane of the capsule divides the trunk of the tonsillar artery, which is usually about 1 mm. in diameter. It is prevented from retracting by being connected with the fibrous wall of the tonsil, and for the same reason is difficult to seize with artery forceps. Only that part of the tonsil should, therefore, be removed which projects beyond the pillars of the fauces. Demme has recently doubted the possibility of severe hæmorrhage from such small vessels as the ascending palatine and tonsillar arteries. He shows that the loop of the lingual artery where it bends downwards may be situated abnormally high, just under or immediately behind the fibrous capsule of the tonsil, and may there give off unusually de-

veloped tonsillar branches or even the ascending palatine artery. In this case one of the branches or the lingual artery itself may be wounded.

As regards the abscess after the injection of gelatine, the organism present belonged to the same anaërobic group as the tetanus bacillus, which has several times been injected with gelatine. The gelatine solution had been exposed to the steam jet for 3 hours, but some spore-bearing microbes can be killed only by a process of fractional sterilisation lasting several days. Gelatine solutions should, therefore, never be prepared hastily, but after fractional sterilisation should be kept ready for use in a sterile flask.

Substitution of the Flexors of the Leg for the Paralyzed Quadriceps Femoris.—Prof. Fedor Krause (*Deutsche Med. Woch.*, Feb.

13, p. 118, and Feb. 20, p. 135).—A boy, born in Jan., 1883, could run at the age of 12 months and was healthy until June, 1884, when he had a pyrexial attack which was followed by paralysis of the right leg. The quadriceps extensor was chiefly implicated. Contraction of the flexors resulted and progressed in spite of tenotomy, extension, and wearing of irons. In Jan., 1898, the whole right leg was smaller than the left. The following measurements of the lower limbs were taken in cm.:—

	right	left
Circumference of upper part of thigh	29½	35½
„ knee	26½	30
„ calf	23	27½

The right femur was but little shorter than the left, but there was a difference of 2½ cm. between the fibulæ. The right patella was considerably smaller than the left. That the bones as well as the soft parts were affected is shown by comparing



FIG. 1.—Right leg, half the natural size.

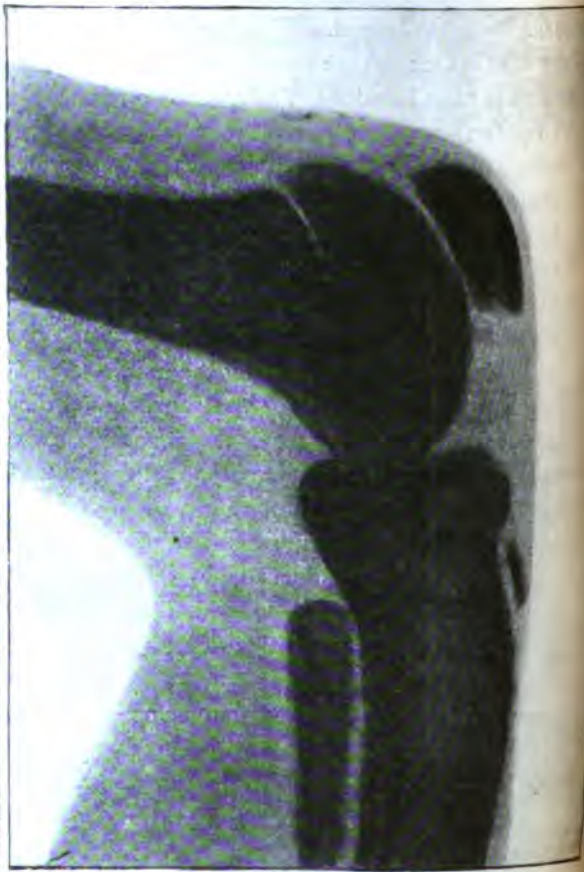


FIG. 2.—Left leg, half the natural size.



FIG. 3.

Figs. 1 and 2. The knee joint was usually flexed at an angle of 110° (Fig. 1), but could be forcibly straightened to an angle of 145° . As soon as any weight was borne on the right leg the knee gave way owing to the unopposed action of the flexors. To prevent this the boy grasped the thigh at every step and forcibly pressed it backwards (Fig. 3). Even then locomotion was difficult.

There was a choice of 2 operations: (1) The knee joint might be fixed by arthrodesis, (2) The quadriceps extensors might be replaced by the flexors, a movable knee joint being retained. The second plan was preferred.

On March 28, 1898, under ether after an Esmarch's tourniquet had been applied, an incision, nearly 7 in. long, was made from the middle of the popliteal space vertically upwards. After

dividing the skin and fascia lata the biceps was isolated, from its insertion nearly to its middle, and the short head arising from the linea aspera was exposed. Its colour, consistence, and electrical reactions were normal. The tendinous insertion was divided immediately above the fibula. An anterior median incision 7 in. long from the patella upwards exposed the quadriceps, which was scarcely distinguishable from the surrounding fat. Opposite the highest point to which the biceps had been freed the atrophied vastus externus was divided for a hand's breadth close to the periosteum of the femur and through the resulting slit the biceps was brought forward. The semimembranosus and semitendinosus were then freed from the posterior incision in the same way as the biceps. As their electrical excitability was diminished it seemed certain that they would be insufficient to oppose the powerful biceps. To obviate this bicipital preponderance and the consequent genu valgum the healthy gracilis was also freed down to its insertion into the tibia. All 3 muscles were divided close to their insertions, and their tendons conducted forwards through a vertical slit in the atrophied vastus internus. In order to avoid the femoral vessels this was made in the middle of the body of the muscle and not close to the bone as was done in the case of the vastus externus. The adductors were not disturbed. The atrophied, but still electrically excitable sartorius was also transplanted to reinforce the gracilis, semitendinosus, and semimembranosus. The conjoined tendon was so atrophied that it was useless to attach the transplanted tendons to it. The tendon of the biceps was therefore fixed to the patella by a catgut suture passed through a hole drilled through its upper and outer segment without penetrating the cartilage; the tendons of the sartorius, gracilis, semimembranosus, and semitendinosus on the inner side, were similarly fixed in the above order from without inwards. Considerable tension was employed. The 4 inner muscles were then joined to the inner margin of the biceps for nearly 2 in. above the patella

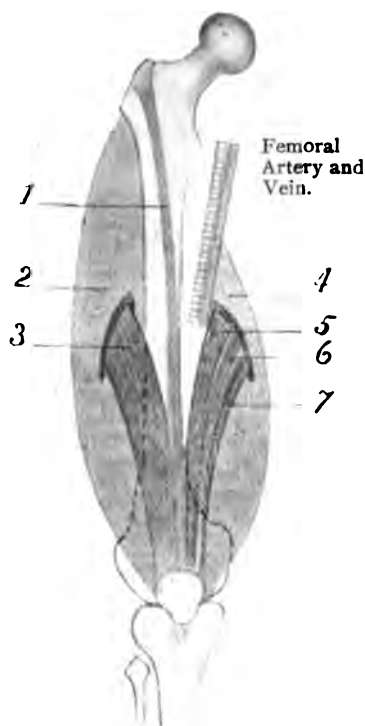


FIG. 4 (diagrammatic).

1, Sartorius; 2, Vastus Externus; 3, Biceps; 4, Vastus Internus; 5, Gracilis; 6, Semimembranosus; 7, Semitendinosus.

(Fig. 4). The fascia lata and skin were sutured and no drainage was employed. As the knee could not be straightened, owing to contraction of the capsule and soft parts, extension and a back splint were applied.

Convalescence was apyretic, although a piece of tendon 2 inches long, which probably belonged to the semitendinosus, sloughed and was extruded. On May 18, 7 weeks after the operation, considerable power of extension was present, and the boy could walk with a back splint and a stick. The muscles of the leg were exercised, faradised, and massaged daily, and at night an extension apparatus was applied. Early in June the back splint was discarded. In the middle of Sept. the knee could voluntarily be completely straightened. On Dec. 1, 1898, he could walk well without a stick, mount and des-

cend stairs, and hold himself erect. In Nov., 1899, he slipped and fractured the ill-developed fibula. There was some genu valgum, and after removal of the plaster-of-Paris a jointed apparatus was worn to prevent its further development. On Dec. 7, 1901, the improvement had been maintained. In mounting stairs the right thigh was adducted, since flexion was imperfect owing to paresis of the ileo-psoas. There was also some talipes equino-varus from paralysis of the peronei, tibialis anticus, and extensor digitorum. A photograph taken on Sept. 16, 1900, shows the attitude assumed while standing (Fig. 5). The patient is erect, the difference in length between the two legs of $3\frac{3}{8}$ in. being compensated by adduction of the



FIG. 5.

thigh and downward tilting of the pelvis on the right. There was only a slight limp in walking. If the leg were extended while the patient was sitting and he tried to flex the leg, it simply fell by gravity. If, however, the calf were supported the gastrocnemius could be felt to contract. The popliteus also remained as a flexor of the knee. The disproportion between the right and left legs, soft parts and bones, was much less marked. The most striking increase of size was in the patella and ligamentum patellæ which practically equalled those of the sound side.

It is remarkable that the sudden change of function was not perceptible to the patient. Though unusually intelligent he could not detect any difference in the process of extension of the right and left legs respectively, though in the former extension was performed by the flexors, and the nervous impulses must have travelled by flexor paths.

The only other surgeon who has utilised the flexors of the thigh as substitutes for the quadriceps is Fritz Lange ("REVIEW," Vol. III., p. 652 and Vol. V., p. 143). He, however, found that the flexor tendons were not long enough to be implanted on the patella and was compelled to make an artificial tendon of silk. The writer did not meet with this difficulty, probably because he freed the flexors for a greater length, brought them forward at a higher level, and divided the tendons close to the periosteum.

Sporadic Elephantiasis.—H. Favarger (*Wien. Klin. Woch.*, Dec. 26, 1901, p. 1293).—Apart from etiology, endemic elephantiasis arabum is distinguished from sporadic elephantiasis by a tendency to be strictly localised—to one limb, the genitals, or even the scrotum. Sporadic elephantiasis tends to involve whole regions, such as the lower part of the body and both lower limbs. The cause of elephantiasis arabum is the *filaria sanguinis hominis*; the

causes of sporadic elephantiasis are less definitely known. It is certain that venous and lymphatic œdema plays an important part, and that inflammatory conditions of the skin—especially eczema, excoriations, and erysipelas—frequently precede or accompany the disease. Once begun, the peculiar hyperplasia of the skin and connective tissue progresses continuously for years. The enormous size and weight of the hypertrophied limbs do not usually prevent ordinary work. Males are more often affected than females. The onset of sporadic elephantiasis usually occurs between the twelfth and twentieth year. It does not necessarily shorten life, but may become indirectly dangerous through excoriation, ulceration, or infection. The following case is of interest chiefly because the patient was under observation from before the onset to the complete development of the disease:—

A peasant, born in May, 1876, of healthy parents known to the writer, always had good health until 1891. Syphilis and malaria could be excluded, and elephantiasis was unknown in the family. In Dec., 1891, he had left pleurisy, which was followed by œdema of the feet and ankles. During 1892 and 1893 he had 3 attacks of pyrexia and intense cardiac pain. In June, 1894, the writer was consulted for the first time. The feet were cold and œdematous, the lips, face, and hands were cyanosed, the pulse was small and soft. There was slight dulness at the left base behind, but the breathing was vesicular. The apex beat was within the nipple line, and the cardiac sounds were normal. The liver was enlarged, but the spleen was normal and there was no ascites. During the summer the œdema increased considerably. In Sept., 1894, there was a systolic retraction of the fourth left interspace. On Sept. 17, 1895, both lower limbs were enlarged, and there were in places gobular swellings of the skin, which was covered with scales. The circumference of the left leg was greater than that of the right. At the heart's apex, was a systolic murmur. In the autumn of 1895 there was erysipelas of the feet. Since then erysipelas,



accompanied by pyrexia and followed by desquamation, recurred on the feet and legs every few weeks. Deep furrows and large pendulous swellings appeared. The increase in size was rapid until the autumn of 1901, but since then it had been less marked. There was no chyluria or albuminuria. The blood, examined at night, contained no filaria embryos. The patient had always lived at Grundlsee in upper Styria where elephantiasis was previously unknown, and had never been in the tropics.

The condition present in Nov., 1901, is well shown in the illustrations. The hyperplasia

involved both lower limbs, the scrotum, and the penis. Anteriorly the inguinal regions (especially the left) and posteriorly the folds of the nates formed the boundary, above which the skin was normal. The pachydermatous skin was tough, and in places, such as the back of the left thigh, formed with the subcutaneous cellular tissue huge pendulous tumours. The cutaneous surface was in places normal, but for the most part it was covered with crusts, scales, or, as over the penis and the upper part of the main tumour, with warts. The feet were oedematous, but in contrast with the rest of the limbs appeared small.

Probably the cardiac failure present in 1894, which was followed by chronic œdema of the lower limbs, had some causal relation to the elephantiasis. Erysipelas, which has often been noted in pachydermatous conditions, first appeared after the onset of elephantiasis, but doubtless increased the lymphatic obstruction.

Treatment consisted in frequent baths, elastic bandages, and elevation of the lower limbs, but at the time of writing excision of the larger tumours was contemplated.

Rupture of Dupuytren's Contraction.—T. Crisp English, M.R.C.S., L.R.C.P. (*Lancet*, April 19, p. 1104).—A man, aged 45, had suffered for 15 years from gradually increasing contraction of the left ring and little fingers. There was a family history of gout and he had suffered from gout himself. Whilst walking he tripped and fell heavily on his left hand. He heard a "loud snap" and found that the finger had been forcibly straightened, the skin at the root of the little finger being torn. There was a gaping wound at the base of the little finger about $\frac{1}{2}$ in. long. The tendon of the flexor sublimis digitorum was exposed at the bottom of the wound with its sheath intact. At the base of the right finger were some extravasation of blood and swelling. Both fingers were quite straight. The wound was thoroughly scrubbed with 1 in 2000 mercuric biniodide solution and a tin splint was moulded to the fingers. Both fingers were vigorously moved daily, somewhat retarding the healing of the wound, which took place in about 4 weeks. The patient was told that the contraction would return unless the fingers were thoroughly exercised and kept straight. These instructions were carried out, and 15 months

after the accident there was no sign of re-contraction and full movement of both fingers was possible.

Accidental rupture of Dupuytren's contraction is a very rare accident. This case shows that it may be beneficial. Mr. W. Anderson, in his Hunterian Lectures on Contractions of the Fingers, related a somewhat similar accident. A contracted finger in Dupuytren's deformity was torn and set free by the handle of a railway carriage, but the benefit was only temporary. Dupuytren originally practised division of the contracted cords and the superjacent skin, straightening the finger with a splint. Suppuration appears to have been common and "if the patient recovered without the loss of his hand" the process of cicatrisation restored the deformity in a more hopeless form than ever. This case therefore seems exceptional.

The Dangers of Taxis.—Prof. Lanz (*Münch. Med. Woch.*, Feb. 4, p. 177) is convinced that attempts at taxis frequently damage the strangulated intestine more than the strangulation itself, and that they are partly accountable for the high death-rate of herniotomy. This cannot be attributed to the operation itself, for the radical cure of hernia is practically without danger. The correctness of this view is supported by numerous cases which have come under his care. The abandonment of taxis as an unsurgical procedure should seriously be considered, now that improved technique and asepsis have deprived cutting operations of danger. In every case of strangulated hernia herniotomy should be performed without delay.

OBSTETRICS AND GYNÆCOLOGY.

Pregnancy and Labour in Advanced Locomotor Ataxy.—Mirabeau (*Centralbl. f. Gyn.*, Feb. 1, p. 125).—Locomotor ataxy is rarer in women than in men, and appears to have less influence on the sexual functions. According to von Leyden and Goldscheider menstruation, though often irregular or absent, more frequently continues undisturbed. A few cases of normal pregnancy and labour during locomotor ataxy have been reported. Conception is most exceptional in advanced tabes.

A woman, born in 1867, contracted syphilis at 17. She was treated in hospital for 3 months, and during the following year had a course of inunctions. Five years later, when apparently healthy, she married a man who had never had syphilis. There were no children. When 25, 9 years after infection, increasing weakness of the legs, an unsteady gait, and occasional pains appeared. The paresis progressed steadily until in 1898 she was unable to walk and had no control over the bladder or rectum. Sexual anæsthesia had been present for 3 years, and there were paralysis of both legs, absence of patellar reflexes, hypæsthesia, and contracted reactionless pupils. In Sept., 1898, there was severe metrorrhagia. Two menstrual periods had then been missed, the uterus was enlarged, and abortion probably occurred. Anti-syphilitic treatment was resumed and, combined with exercises, effected some improvement, in that a few steps could be taken with the aid of a stick. When seen by the writer 9 months later she was 3 months pregnant. The improvement in the ataxy had not been maintained and repeated catheterism was required for retention of urine. Another course of inunc-

tions was prescribed. Pregnancy ran a normal course though the foetal movements were imperceptible to the patient. Labour began at term. The "pains" were completely painless, and until the membranes ruptured and the os was fully dilated labour was not suspected. Sixty-five minutes later, during which time there had been 7 pains of unusual length and strength, labour was completed. The child was born with the sixth pain, the placenta with the seventh. Until the mother saw the child she was ignorant of its birth. The child, at the age of 3 weeks, was said to have a macular eruption which yielded to calomel.

As the centres for the genital organs, like those for the bladder and rectum, are situated near the junction of the dorsal and lumbar cord, that is, in the part usually first affected by tabetic degeneration, it might be expected that uterine contractions in such a case would be slight and ineffective. The fact that they were the opposite proves that the motor functions of the uterus are practically independent of the spinal cord and are regulated by peripheral nerve-centres in the organ itself. As the uterine contractions were completely painless the normal nervous connection between the uterus and spinal cord and sympathetic system evidently consists essentially of sensory tracts, which may excite motor effects reflexly, but which as regards uterine contractions are of a regulatory or even inhibitory character. Benike has published a case in which labour proceeded normally, though there was complete transverse myelitis from spinal caries, and Golz has proved that conception and labour in bitches are unaffected by complete transverse division of the dorsal or lumbar cord.

Hypertrophy of Mammæ with Supernumerary Mammæ during Pregnancy : Amputation. — Arthur

Foges (*Wien. Klin. Woch.*, Dec. 19, 1901, p. 1255).—A Hungarian woman, aged 18, married 8 months, was admitted to hospital on Feb. 10, 1901, in the fourth month of pregnancy. Up to the age of 16 the breasts were but slightly developed. Then they began to enlarge, especially during menstruation, and a swelling appeared in each axilla. At the time of marriage the breasts were well, but not excessively developed. But after the last menstrual period, which was at the end of Oct., 1900, they increased enormously and darting pains occurred in them. The woman became emaciated, although her weight increased, and in Jan., 1901, she was unable to wear stays owing to a pressure sore on the left breast.

She was weak and anæmic. The breasts reached to a line joining the anterior iliac spines. The greatest circumference on the right side was 58 cm., on the left 65. The skin was œdematous and traversed by enlarged veins; the areolæ were darkly pigmented, and the nipples depressed. On the inner and lower quadrant of the left breast was an extensive suppurating pressure sore. The consistence was elastic and tense and there was no tenderness. In each axilla was a tumour, which was displaced outwards by the mamma and was of the size of 2 fists and of the shape of a cocoanut (Fig. 1). The urine contained neither albumen nor sugar.

On Feb. 11, 1901, Gersuny amputated both breasts, the operation lasting 3½ hours. An elastic bandage was applied to the breasts and some stout drainage tubing coiled tightly round their bases so that the incisions were practically bloodless. Fairly extensive skin flaps were made and the whole breasts removed with the exception of the narrow layer at the bases which supported the elastic ligatures. Before these were removed all visible vessels, some of

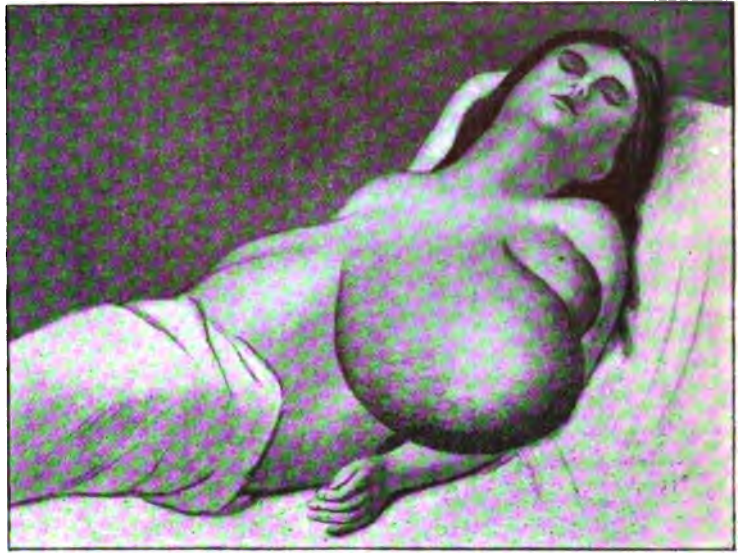


FIG. 1.



FIG. 2.

which were of the size of the little finger, were ligatured. The amputated portion of the right breast weighed 6,000 gm. (13.22 lb.), that of the left 6,500 gm. (14.32 lb.). The wounds healed by first intention, and at the end of a week appetite was returning and the general condition improving. On Feb. 25 the axillary tumours were removed under Schleich's local anæsthesia; the right weighed 300 gm. (10½ oz.), the left 350 gm. (12¼ oz.) Thus the combined weight of the amputated breasts and supernumerary mammæ was 13,150 gm. (29 lb.). On March 12 the patient was discharged in good health. Early in Aug. she gave birth to a healthy child.

Amputation for diffuse mammary hypertrophy has never before been performed during pregnancy. Hypertrophy which begins at puberty practically never subsides and the condition has not infrequently been treated surgically. In the hypertrophy of pregnancy, however, expectant treatment has been the rule, because the enlargement which begins early in pregnancy generally becomes stationary in the later months, and may subside slowly post partum. In all cases of mammary hypertrophy whether of puberty or pregnancy the general health suffers greatly, apart from the mechanical burden imposed by the weight. The progressive asthenia was most marked in the writer's case and to wait for 5 months, until delivery, appeared inadvisable. The only alternative to amputation was therefore the induction of premature labour. But this, in itself not without danger, did not promise certain results and even if immediately successful there would have been a liability to recurrence in future pregnancies.

The structure of the left breast was that of a typical adenoma (Fig. 2), though no circumscribed tumours were present. In the right breast there were cysts due to dilatation of the ducts (Fig. 3). The structure of the supernumerary mammæ was that of hypertrophied mammary tissue; in the right the hypertrophied fibrous tissue was diffuse (Fig. 4), in the left it

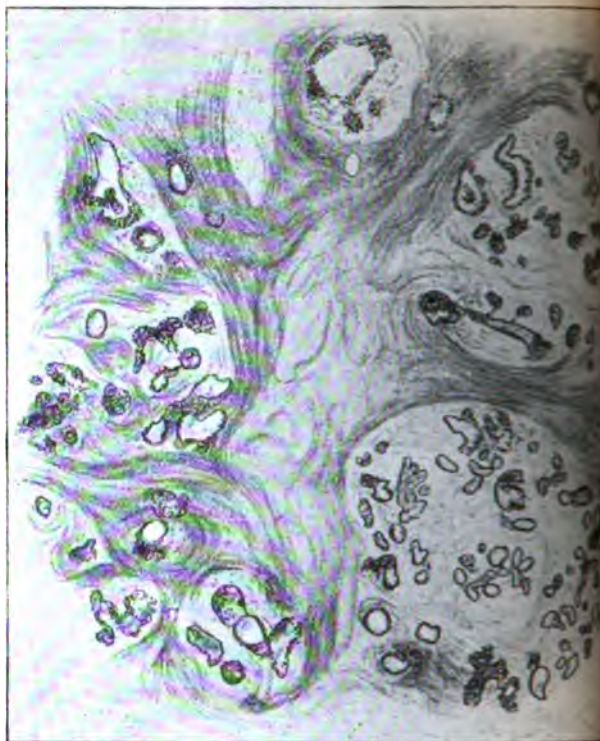


FIG. 3.



FIG. 4.



FIG. 5.

projected into the dilated ducts (fibroma intracaniculare, or proliferous cysts (Fig. 5). The localisation of supernumerary mammae in the axilla is according to Leichtenstern rare; more usually they are below and internal to the normal nipple.

Pregnancy in a Rudimentary Horn of a Double Uterus (Uterus Bicornis Unicollis).

—Prof. Krönig (*Centralbl. f. Gyn.*, Jan. 11, p. 36).

—E. Kehrer has lately collected 82 cases of pregnancy in a rudimentary horn of a double uterus. As half of these were published during the last 13 years the condition must be less rare than is usually supposed. More cases are recognised now than formerly, not because diagnostic skill has increased—for without laparotomy it is practically impossible to distinguish

pregnancy in a rudimentary horn from tubal gestation—but because of more frequent operations. The treatment employed has varied with the calibre of the communication between the rudimentary and the well-developed horns. If the communication was narrow the pedicle was ligatured and the whole sac removed as in uncomplicated tubal pregnancy; if the pedicle was wide the pregnant rudimentary horn was usually amputated; if, however, with a wide pedicle there was advanced pregnancy the sac in most cases was fixed to the abdominal wound, opened, and plugged. Of Kehrer's 82 cases the communication between the two horns was in only one wide enough to allow removal of the contents of the rudimentary horn by a curette passed into it through the communication with the chief horn above the internal os. Nagel, however, states that the communication with the cervix is often unexpectedly developed and extensible, and insists that the cervix should be dilated and attempts made to remove the foetus *per vias naturales* in every case of fairly advanced pregnancy, especially if sepsis of the sac is suspected. The following case confirms Nagel's views as to the possibility of dilating the communication between the two horns:—

A woman, aged 23, who had given birth to 2 living children, the breach presenting in each case, menstruated for the last time on Aug. 5. On Sept. 29 she was suddenly seized with violent labour-like pains. Profuse hæmorrhage from the vagina followed and necessitated plugging. Next day the hæmorrhage had ceased, but the patient was collapsed, and the abdomen tender. Per vaginam the os was found to be closed, and the body of the uterus to be slightly enlarged and displaced to the right. To the left of the uterus was a tumour of the size of a small fist, fairly movable, and connected with it by a pedicle of the size of a little finger. Left tubal pregnancy with a foetus either alive or only recently dead was diagnosed. The sound was passed 8 times and on each occasion entered the cavity of the uterus on the right. Laparotomy

was performed on Oct. 1. About 9 oz. of dark fluid blood were in the abdominal cavity. The right horn resembled in shape a normal uterus, but to the left about on a level with the internal os was attached a structure of the thickness of a large index finger which gradually opened out into a thin-walled, bluish, semi-transparent sac. To the left of this again was attached a normal Fallopian tube. The ovaries were normal. Amputation of the pregnant horn might have weakened the lateral wall of the chief horn and led to complications in subsequent pregnancies. The writer, therefore, temporarily closed the abdominal wound, dilated the cervix and the somewhat enlarged right uterine cavity with Hegar's dilators, and under guidance of the finger passed a sound into the passage which communicated with the left horn. This canal was then dilated with Hegar's dilators until the finger could be passed into the sac. The other hand was introduced into the abdominal cavity and the sac was thoroughly explored between the two. The wall was in places no thicker than paper. The sac, which was of the size of a man's fist contained dark blood and placental remnants; no foetus was found. On the removal of its contents the sac collapsed and all hæmorrhage ceased. Nothing further was done and the abdominal wound was permanently closed. The operation lasted 35 minutes. The patient went out well 19 days later. No rupture in the cyst wall, and no origin of the blood in the peritoneal cavity were discovered. The writer regrets that he did not render the left Fallopian tube impermeable during the operation, in order to minimise the risk of recurrence

of pregnancy in the left rudimentary horn. See also "REVIEW," Vol. II., p. 445.

Primary Tuberculosis of the Cervix Uteri, Simulating Cancer.—Dr. A. H. N. Lewers (*Lancet*, April 12, p. 1037).—A married woman, aged 36, who had never been pregnant, suffered for 9 months from a vaginal discharge which was blood-stained and slightly offensive. Bleeding was noticed after coitus and after using a vaginal syringe. She had had slight pain in the left iliac region for about 5 months. The catamenia had been regular, lasting only 3 or 4 days, and were not attended by any special pain. The general health had been good up to 12 months before she came under observation. Then she began to get weak and disinclined for exertion. She did not think that she had lost flesh. One of her aunts had died from consumption.

The condition of the vaginal portion of the cervix seemed to be identical with that in many cases of cancer. It was the seat of "a friable growth" which bled readily on examination. The uterus was freely movable. Believing that the case was one of cancer of the cervix suitable for radical operation, Dr. Lewers performed vaginal hysterectomy on Jan. 30, 1896. Microscopic examination showed no evidence of cancer but that the structure was tuberculous. On Nov. 20 she said that she "enjoyed fairly good health and had had no return of the bleeding." While she was in the hospital there was no evidence of any disease in other organs. Primary tuberculosis of the cervix is exceedingly rare.

NOTES.

TUBERCULOSIS AND MODIFICATIONS OF SPECIFICITY OF FUNGI.—That cattle may be experimentally infected by the bacilli of human tuberculosis has been abundantly proved, both before and since Professor Koch delivered his address. But the tubercle bacillus obtained from a human source is distinctly less virulent to cattle than that obtained from a bovine source. On the other hand, a number of cases has been recorded in which accidental inoculation of man with the bovine virus has produced tuberculosis. The question whether, under ordinary conditions there is any practical danger of infection of man from cattle or *vice versa* is a different one from that of the success or failure of inoculation experiments, and is much more difficult to solve. Even granting, as appears to be the case, that the bacilli of human and bovine tuberculosis are but temporarily modified forms of one organism, it by no means follows that bovine tuberculosis is, under ordinary circumstances, a source of danger to man. Indeed the attempts to prove that milk is to any extent a source of human tuberculosis are far from satisfactory.

In the *Polyclinic* of May Mr. Jonathan Hutchinson adduces some interesting facts of fungous life to show that this question is not, as seems to be generally supposed, merely one of bacteriology. They appear to prove that a sort of pseudo-specificity, sufficient to interfere with the germination of spores, may easily be established by habitat. Thus

a fungus, the *Peridermium Strobi*, in its æcidial stage infests the Weymouth pine. Its uredo life is passed, under the name of the *Cronartium ribicolum*, on the leaves of the red or the black currant. Proximity of these bushes or of certain allies is necessary for infection of the pine. Spores may be taken from a pine (infected from some other source) and made to infect both these species of currant, and again from them the pine may be infected. If this be done it will be found that both species of currant cannot be infected indiscriminately. The red currant will take infection only from a pine which has been infected by spores from a red currant and *vice versa*. Thus habitat for only a single generation confers upon the fungus a sort of potential specificity. It will no longer germinate on a soil which previously suited it. May not a similar modification of the tubercle bacillus be produced by its living even for a single generation in the tissues of the ox, and unfit it for a human host? Observations of great interest on this subject have recently been published by Professor Eriksson of Stockholm. He finds that *Puccinia graminis*, the fungus which produces the rust on the leaves of wheat and other cereals, and which has long been known to have its æcidial form on the barberry, consists of 6 biologically distinct forms or sub-species. These sub-species are determined as such by the host which they have infested in their uredo form. In the æcidial form they all occur on the barberry and some of its allies,

and present one and the same organisation. Even in their uredo form, on different members of the grass tribe, they are still morphologically indistinguishable. Their aptitude for growth is, however, not the same. The uredo which has grown on rye, for instance, will produce the æcidium on the barberry, but from that æcidium wheat cannot be infected, but only rye; and so with the rest. Thus a fungus may, without undergoing any alteration of form which can be distinguished, acquire physiological modifications which unfit it for indiscriminate contagion. It may be plausibly conjectured that this unfitness does not amount to impossibility of transference but only implies great difficulty. Another example of this kind of specialisation by habitat is furnished by the bacillus anthracis. This organism may infect horses, cattle, and sheep, but as a rule it does not easily spread from one of these species to another. If once well-established amongst sheep it keeps to sheep, and so on. Other illustrations of the efficiency of change of habitat in effecting physiological modification might be adduced.

ART AND MEDICINE.—Æsculapius was the son of Apollo, and during the ages of human development Art has always retained a certain connection with Medicine, whence it has at times derived inspiration. Not only have painters and sculptors continually chosen medical themes, but, as Dr. Paul Richer points out in his fine work just issued "*L'Art et la Médecine*," they have often, from various motives, selected models suffering from disease or malformations. An ancient caricature is thus frequently little else than a realistic, nay even servile, portrait of some goitrous or hunch-backed person, and is valuable as showing the identity of disease in successive generations. In this connection Dr. Richer cites the

numerous pictures that have come down to us of court jesters, dwarfed and often imbecile, and probably striking contemporary likenesses.

The demoniacs of the Old Masters are often portraits drawn with the greatest accuracy of persons whom we should now recognise as epileptic or hysterical. These representations of persons 'possessed' date back to Greek antiquity, some of the most beautiful vases and friezes representing the ecstasies of the worshippers of Apollo or of Dionysus. There can be little doubt that the frenzy of the Bacchanals was a kind of hysteria, which might or might not be increased by potations. A bas-relief in the Louvre, known as "The Dionysiac Pomp," represents a procession of beautiful figures, suffering, but most gracefully, from excess of physical and mental excitement. In a vase-painting of the best age the exhaustion following these moments of exaltation is shown in the person of a nymph sinking insensible into the arms of a bystander or priest of Dionysus. The Dark Ages treat similar themes far more grimly.

With the advent of Christianity the idea of possession by evil spirits began to prevail, and lunacy was thenceforth represented in its most repulsive aspects. One of the most marvellously depicted maniacs in the whole range of Art occurs in the "*Hortus Deliciarum*" of Herad von Landsperg, which dates from the twelfth century. Herad was an abbess, but she has here observed as accurately as an anatomical draughtsman. Her lunatic rages along, half naked, with long dishevelled hair, hands tied behind the back, and knotted and protruding muscles! Not so successful, in a later age, was the great Raphael, whose possessed boy in the famous "*Transfiguration*," is the principal figure in the last and greatest work of

the greatest of the world's painters. In drawing this figure, Raphael seems to have been under the influence of the old delineators of bacchic orgies above mentioned. He has erred on the side of grace and ease. His boy is not epileptic at all: he walks too well and waves his arm too easily. Sir Charles Bell has compared him most unfavourably with Domenichino's "Miracle of St. Nilus," in which the epileptic boy in the midst of his seizure seems to have been painted from life. This picture, which is a fresco in the Convent of Grotta Ferata, was engraved by Bartolozzi, but is not otherwise familiar in England. Many other great painters have dealt with various forms of neuroses, as for instance, Jordæns and Andrea del Sarto, whose 'possessed woman' at the beginning of a crisis is a noble painting. Peeter Breughel, that quaint sixteenth century Flemish painter, appeared to delight in the grotesque side of disease, and his representations of the "Dancers of St. Guy," religious enthusiasts afflicted with violent dancing mania, are most interesting as contemporary studies in pathology. The dancers are performing convulsive evolutions, with interlocked arms, but their faces are void and stony in expression. A less observant painter would have made them smile or frown.

The late Professor Charcot was, it appears, much struck by the sight of the grotesque head at the door of a Venetian church, which Ruskin condemns as so abject and brutal that it should be neither represented nor written about. The great French neurologist, however, saw in the head a vivid record of conditions on which he had but recently lectured at the Salpêtrière. With its protruding tongue and drawn mouth, this famous head is indeed a capital representation of hysterical spasm of the face. It is doubtless the portrait of

some poor contemporary hysteric, at whom the sculptor had laughed or marvelled after the manner of the time. For there can be little doubt that to Renaissance minds disease was rather laughable than pitiable. Shakespeare's "Hamlet," it has been shewn, was intended to provoke mirth in the insane scenes, and, in the same way, hysteria, plastically depicted, was held to be a fit subject for hilarity. The artists of the past were anything but scientific in motive: their pathological accuracy is therefore all the more remarkable.

THE EFFICACY OF VACCINATION.—The statistics of the London small-pox epidemic lately published by the Registrar-General show the value of vaccination in a still more striking fashion than his previous ones ("REVIEW" p. 70), which were necessarily incomplete. They present the case for vaccination in a nutshell, and should prove useful to medical practitioners in the unceasing controversy with anti-vaccinationists. From the beginning of the epidemic to April 5, 1902, 1,015 London residents have died from small-pox. Of these, excluding 66 cases in which vaccination or revaccination was not performed until after infection by small-pox, there was only one death which occurred within 10 years of the patient's vaccination. And this was the death of an infant, aged 13 months, who is certified to have been imperfectly vaccinated. The deaths at all ages of the vaccinated amounted to 457, of the unvaccinated to 398. But under the age of 20 there is a striking difference in the mortality of the two groups: of those who were not protected by vaccination 348 have died; of those who were, only 22. These statistics show that vaccination affords complete protection for 10 years, incomplete protection after this period.

LEADING ARTICLES

LANCET, May 10, p. 1305.

The Quiescent or Latent Period of Abdominal Inflammation.

By A. H. TUBBY, M.S. Lond., F.R.C.S.

In some cases of acute abdominal inflammation the pain subsides, the vomiting ceases, the temperature falls to normal, and the patient expresses himself as being tolerably comfortable. But this change is not significant of improvement and is deceitful. The interval of apparent remission the writer terms the quiescent or latent period—quiescent in the disappearance of some of the symptoms and latent in that it precedes an aggravation of trouble, acute peritonitis, and a fatal issue.

A married woman, aged 30, with a history of dyspepsia for some years was on one Monday afternoon suddenly seized with acute pain about the umbilicus. The pulse quickened, the temperature rose to 100.4° , and the abdomen rapidly became tympanitic. Next day the symptoms remained much the same until towards evening, when marked improvement took place. On the third day she was free from pain, the pulse and temperature were normal, the expression was placid, and apparently there was no need for surgical interference. She was however kept in bed and carefully fed by enemata, as leakage from a gastric ulcer was suspected. On the fifth day the symptoms suddenly returned, and with great violence. She was anæsthetised for operation when suddenly she vomited a large quantity of blood and died. A necropsy could not be obtained. The latent period in this case was from the Tuesday night to the Friday morning. The writer saw

the case some years ago. No doubt there was some symptom more or less marked, that escaped his attention which, had he known it, would have revealed the significance of the onset. If he had been called to the case at this time he should have examined the blood for leucocytosis. Probably at the onset of the attack an ulcer had eaten its way down to the peritoneum and a little leakage had occurred, the aperture being plugged by inflammatory lymph, but the ulcerative process went on rapidly until a large vessel was eroded. No doubt the patient ought to have been operated upon during the latent period.

In addition to gastric lesions the latent period is from time to time a prominent feature in the following conditions:—1. Injury to the intestines with or without rupture. 2. Perforation of the intestines by ulceration. 3. Injury to, and bruising of the peritoneal connexions of the viscera, with interference with their blood supply. 4. Acute diseases of the genital organs, especially of the Fallopian tubes. 5. Acute appendicitis—ulcerative, perforating, or gangrenous. This disease affords by far the greater number of examples of apparent improvement.

TRAUMATIC RUPTURE OF THE INTESTINE.
—Dr. J. J. Buchanan reports a case of a young man, aged 18, who was struck in the abdomen by an iron implement (*Annals of Surgery*, vol. xxxii., p. 673). When seen 5 hours afterwards he was unable to say where he had been struck. There was no ecchymosis, sign of contusion, or area of tenderness. The general condition was good and the pulse was of good volume, regular, and 88. The temperature was 98° . There was no abdominal distension

or excessive rigidity but the abdominal wall was not normally soft. He vomited after the accident and once after admission to hospital. Peristalsis was almost absent, and on this symptom, taken with the slight rigidity and the fact that he had vomited twice, abdominal section was performed 6 hours after the accident. On opening the peritoneum thickened and congested bowel presented itself and sero-purulent fluid escaped. A rupture of the small intestine about a third of an inch in length with faecal matter exuding was discovered. This was sewn up, the peritoneal cavity was douched with saline solution, and a drainage tube was put in. The patient recovered. But many patients with marked evidence of contusion of the abdominal wall and considerable collapse recover without operation.

PERFORATING ULCER OF THE INTESTINE.—A case is described by Dr. A. B. Johnson, in which a man, aged 27, was admitted to hospital with a history that 4 days before he was seized with colicky pains about the umbilicus (*ibid.*, vol. xxx., p. 634). They were not severe, the bowels acted daily, and he remained at work. On the day of admission he was seized with severe abdominal pains which were followed by a chill. The abdomen was not distended. It was markedly tender and was rigid throughout. Eight hours after admission the abdomen was opened and much cloudy, bile-stained fluid, with flakes of coagulated lymph, escaped. Upon the anterior surface of the descending portion of the duodenum a small perforation was found forming the floor of an ulcer. The perforation was closed and the patient recovered. In this case the latent period, or at any rate the period in which grave symptoms appeared to be absent, lasted 4 days.

INJURY OF THE PERITONEAL CONNEXIONS OF THE VISCERA.—Still more deceptive are cases

of injury to the blood supply of the intestine or bruising of the peritoneal connexions. A middle-aged man was knocked down by an omnibus, the front wheel passing over him obliquely from the pubes to the left lumbar region. He was much collapsed when brought to the hospital but there were no distinct symptoms. After 3 or 4 days he recovered and it was thought that he might be discharged, but the surgeon, the late Mr. Davies-Colley, preferred to watch the case. On the twelfth day the patient was suddenly seized with acute symptoms of peritonitis and died in a few hours. Considerable sloughing of the great omentum was found.

A remarkable case of traumatic rupture of the mesenteric arteries has been recently reported (*Annals of Surgery*, March, 1902). A very heavy man, aged 53, slipped and fell and sustained a fracture of the bones of the leg. Some symptoms of shock were noticed. There was no pain in any other part of the body. On the following day he seemed weak but was easy and cheerful. The temperature was 99.5° and the pulse 99. The urine was scanty but it contained no abnormal constituents. His condition altered for the worse during the next 5 or 6 days but no definite diagnosis could be made. There was slight distension of the abdomen but careful percussion revealed no localised dulness or undue resonance. He was extremely pallid and breathed irregularly; his temperature was subnormal and his pulse was 160, and it was thought that he was dying from internal hæmorrhage. On the seventh day after the accident he died. On opening the abdomen a large quantity of blood was found which was due to the rupture of several of the mesenteric arteries. The mesentery contained an enormous amount of fat and no doubt by

the pull exerted upon this structure in the violent fall the vessels were lacerated. In this case the latent period may have been due to the slow hæmorrhage and absorption of the liquid portions of blood by the peritoneum in the early stages.

ACUTE DISEASES OF THE GENITAL ORGANS.—Gynæcology furnishes numerous examples of acute diseases of the genital organs, especially of ruptured Fallopian tubes from pyosalpinx and tubal pregnancy, in which the serious nature of the disease is not at once evident.

ACUTE APPENDICITIS.—The latent period is well marked in cases of appendicitis. Mr. Charters Symonds mentions the case of a woman, aged 20, who 48 hours after an acute onset was considered so well that operation was postponed until the next morning, when a foul abscess was evacuated. He says that "in nearly all the acute cases a stage is reached soon after the onset marked by a cessation of all acute symptoms. The patient passes, unaided by sedatives, into a condition of repose. This period, if wrongly interpreted, may lead to disaster. It is in its early stage a period of safety, one in which operation is successful."

A girl, aged 18, was seized with acute pain, vomiting, and sickness. These symptoms subsided after 24 hours and her condition improved during the next 48 hours so that she was able to go about almost as usual. On the fourth day intense pain in the abdomen set in, the vomiting returned, and she was prostrate. The parents were urged by the medical attendant to have surgical assistance but this was refused until the fifth day, when the condition was one of acute septic poisoning. The temperature was 100° and the pulse 124. The abdomen was distended and, in fact, the patient presented the picture of virulent peritonitis. As a remote hope an operation

was undertaken. A long, much distended appendix was found, but her condition became so bad that it could not be removed. The abdomen was washed out with saline solution and the appendix was packed round with strips of iodoform gauze. For 12 hours there was marked improvement but then aggravated symptoms set in and she succumbed 24 hours after the operation.

A young man, aged 18, after a bicycle ride was seized with acute abdominal pain while away from home. After 24 hours he felt well enough to return. He appeared to be doing well and remained in fair condition until 2 p.m. on the third day, when the pain and vomiting returned and his general condition was that of collapse. On the fourth day the pulse was uncountable, the temperature 101°, the abdomen distended, and there were tenderness and an ill-defined mass in the right iliac fossa. On opening the abdomen foul pus was evacuated from the right iliac fossa. After the operation the pulse improved somewhat but death followed in 24 hours.

Sir Frederick Treves in his work on Perityphlitis (p. 27) says that he has seen 2 cases of septic peritonitis, from trouble in the appendix, run their entire course with a flaccid abdomen and scarcely any tenderness. Both patients were men over 50. Morphia had not been administered and death took place from toxæmia within 7 days. One man spent some hours in applying massage to his abdomen and the other drew frequent attention to the absence of tenderness by slapping the abdomen.

In all these instances although the usual train of symptoms of virulent mischief was not present, yet there was some sign or other which subsequent investigation showed to afford sufficient grounds for immediate

surgical interference. Either the remissions were never quite complete or the usual course differed by the persistence of some symptom. Thus slight muscular rigidity may have persisted, peristalsis may have been absent, some tenderness may have been elicited on careful palpation, the pulse may have been out of proportion to the temperature, or the general appearance of the patient — deceptive to the casual observer — may have suggested to the experienced eye that all was not well. Again, it is extremely difficult to gauge the value of symptoms or signs slightly marked when the deceptive remission has been brought about either by drugs or by the application of ice-bags. Explanation of the latent period is difficult. In some cases in which tenderness was absent—for example, in very acute appendicitis—the appendix was gangrenous and its nerves were therefore insensitive. And so it may be that in cases of acute general peritonitis the sensory nerves of the peritoneum are paralyzed from the first. Doubtless there are other causes. A careful compilation of abdominal cases enables certain symptoms to be fixed upon—even in obscure cases—as of great moment.

1. The most important information is obtained by repeated records of the *pulse and temperature*. These may rise together in due proportion ; or there may be a slightly elevated temperature with an entirely disproportionate pulse-rate ; or the temperature may be subnormal when taken on the surface, while the pulse may be greatly accelerated. This last condition is most often found during the latent period in very grave cases, and taken with a history of the onset of the attack affords justifiable grounds for immediate operation. In all abdominal cases the pulse and temperature should be frequently taken,

at least every 3 hours, although the disease appears to be quiescent. Operation in the early part of the latent period will probably be successful, therefore this inverse relation of temperature and pulse should be observed at the earliest possible time. If the altered relationship has been established for a day or two the prospects of operation are extremely unfavourable, because the patient has probably become saturated with septic products. Again, it may happen—as, for example, in acute appendicitis—that after an initial rise of temperature and pulse there is a fall in both, succeeded after a few days by a rise. This indicates the presence of a considerable amount of pus, and unless the abscess be evacuated there is a grave danger of it bursting into the peritoneal cavity.

2. In the case of the perforating duodenal ulcer quoted there was no vomiting or severe pain and the patient was able to work. *Rigidity*, with some tenderness, was the only definite symptom ; but on opening the abdomen acute peritonitis was found. Perhaps of all the physical signs transient or persistent rigidity and absence of other symptoms are the most valuable, and they become convincing when signs of peristalsis are absent.

3. It is difficult to speak of *distention* as a symptom taken by itself, for it is often absent in the early stages, even in so serious an affection as a perforating gastric ulcer ; but in the late stages of abdominal diseases its fatal significance is only too well known. Distension which persists longer than from 24 to 36 hours and is unrelieved by treatment, such as a turpentine enema, is of grave moment.

4. As a rule *vomiting* is absent during the quiescent period. At the beginning of illness there may be vomiting but at the “period of repose” the vomiting subsides. It may be because the stomach has

been emptied of its contents by the initial sickness, or because the vomiting has been kept in check by sedatives. But if the vomiting recurs in spite of careful feeding and nursing, and more especially if it persists after the administration of sedatives, the symptom is not to be under-estimated.

5. Much careful work has been recently done on *leucocytosis* in abdominal affections. Dr. Da Costa ("REVIEW," p. 72) states that in an appendicular abscess the number of leucocytes per c.mm. may be from 15,000 to 20,000 (the normal number is from 5,000 to 7,000 and rises to 12,000 after a meal). He adds that if the pus focus be walled off and no toxic absorption takes place there may be no rise in the number of leucocytes. In perforative appendicitis there is a very abrupt rise of leucocytes and counts of over 20,000 indicate either pus, gangrene, or peritonitis. Dr. Cabot states that leucocytosis is never seen in the course of gastric ulcer except after severe hæmorrhage and at the height of digestion. Leucocytosis when the influence of bleeding and digestion is excluded is "practically unknown in uncomplicated gastric ulcer." When, therefore, grave symptoms occur in a young woman with a history of previous digestive disturbance, with a sudden development of marked leucocytosis the indications for immediate surgical interference are imperative.

AMERICAN MEDICINE, March 22, p. 463.

The Diagnosis of Cystic Kidneys.

By Prof. WILLIAM OSLER.

Cystic kidneys are more often found at necropsies or at operations than recognised by the physician during life. But the clinical features are sufficient for diagnosis.

CASE 1.—A man, aged 59, was admitted to hospital on Oct. 3, with dyspnœa. He had been ill from time to time for 10 years. The attacks had so increased of late that he was incapacitated for work.

He was orthopnœic and cyanosed, and had a rapid, feeble pulse. The heart was dilated and the impulse was feeble and diffuse. There were a gallop rhythm and sclerosis of the superficial vessels. General arterio-sclerosis with secondary hypertrophy and dilation of the heart was diagnosed. The abdomen was enlarged and tense. The liver was greatly enlarged, reaching nearly to the navel. The urine had a s.g. of 1016 and contained a trace of albumin and numerous granular casts. For a week he remained in much the same state, with a marked gallop rhythm, shortness of breath, and signs of incipient effusion in the chest and abdomen. On the 13th he died suddenly.

NECROPSY.—There were marked hypertrophy and dilation of the heart, general arterio-sclerosis, and emphysema. The kidneys were greatly enlarged, measuring 21 by 11 cm. They were universally cystic, the cysts ranging in size from that of a pea to that of an egg, and containing clear yellow, and in some places turbid material.

CASE 2.—A woman, aged 28, who usually had good health, was admitted to hospital on Jan. 21, 1899. About a year before the urine was blood-red for nearly a week. In Dec., 1898, there were for 2 weeks paroxysmal pain in the right side and bloody urine. Some distension of the abdomen was also noticed. The prostration and weakness from loss of blood caused her to remain in bed nearly 3 weeks. When she got up she noticed that her feet were a little swollen and her eyelids puffy. Thereafter micturition was more frequent by day; sometimes it was performed every 1½ hours.

She looked healthy but was rather sallow. The pulse was of increased tension. The radial and temporal arteries were sclerotic. The cardiac impulse could be felt in the fifth space in the anterior axillary line. The second sound was accentuated. There was fulness in both flanks, which were occupied by large irregular tumours. The red blood corpuscles were 2,400,000 per c.mm. and the hæmoglobin was 40 per cent. of the normal. The urine was of s.g. 1007 or 1008 and contained a trace of albumin and usually a few red blood corpuscles. Once a hyaline cast was seen. Rarely more than a litre was passed in the 24 hours. Cystic kidneys were diagnosed. The patient was discharged on Feb. 11, 1899, feeling comfortable. She was readmitted on Feb. 27, 1900, with urgent dyspnoea. She had remained well but had at times passed bloody urine. The dyspnoea had existed for 4 days. The thorax showed no signs of disease. She became so cyanosed that tracheotomy was performed on Feb. 28, but without relief. The urine was of s.g. 1013 and contained many red blood corpuscles but no casts. She gradually sank and died on March 1.

NECROPSY. —The kidneys were greatly enlarged and consisted of congeries of cysts. The left kidney was 22·5 cm. long and 9·5 cm. wide, and reached above to the sixth interspace in the mammary line. It weighed 1,400 gm. Some of the cysts had clear, others dark-coloured contents. The upper end was formed of one large cyst nearly 9 cm. in diameter. The right kidney was 16 by 9·5 cm. and reached upwards to the level of the seventh interspace in the nipple line. It weighed 950 gm. There was marked hypertrophy of the heart and general arterio-sclerosis.

These 2 cases well illustrate the general features of cystic kidneys. Case 2 shows the

facility with which the diagnosis can be made in the presence of a characteristic combination of symptoms. These are: (1) bilateral tumours in the flanks (in only 2 out of 88 cases was the disease unilateral); (2) the cardio-vascular changes and urine of interstitial nephritis; and (3) hæmaturia which may be paroxysmal and be associated with much pain. The tumours in Case 2 were readily grasped bimanually, and the situation and mobility left no question that they were enlarged kidneys. This circumstance alone should arouse suspicion, as other forms of bilateral renal tumour are excessively rare. Hæmaturia was present in 19 out of 78 cases. While the local symptoms, such as pain and tumour, may be well marked, it is the cardio-vascular, gastric and pulmonary features of interstitial nephritis which attract attention. The diagnosis has been made so rarely (in only 5 out of 62 cases) because the patients are seen, as in Case 1, with signs of cardiac insufficiency and dyspnoea, and attention is not directed to the kidneys; or they are attacked with sudden coma or uræmia. Once attention is called to the characteristic combination of symptoms the diagnosis is readily made. Failure to recognise the condition may have disastrous consequences. Thus a surgeon removed a large cystic kidney without examining the other because his attention was not called to it. The patient died of uræmia. Operation is usually contra-indicated, for removal of one kidney simply takes away one-half of the available renal tissue. But Mr. Henry Morris has successfully operated in cases of unilateral disease. He thinks that when the opposite kidney has been ascertained, either by inspection or palpation, to be unaffected, the patient should not be denied the relief from pain and hæmorrhage and the immunity from the danger of suppuration offered by nephrectomy.

GAZETTE DES HOPITAUX, April 5, p. 385.

Joint Lesions in Hæmophilia.

By PIERRE POILLET.

The joint changes of hæmophilia most frequently occur in males. They are usually observed in the first 15 years of life, almost never in the first year, rarely in the second, and generally between the ages of 4 and 10. According to some writers, especially the German, cold and damp have a considerable influence in determining them. Occasionally injury is the cause. Often any explanation of the arthropathy is impossible. The knee is the articulation most usually affected. If only one joint is involved it is the knee; much more frequently several joints are affected, possibly in succession. Of 32 cases the knee joint was affected in all, the elbow in 16, the ankle in 12, the hip in 5, the shoulder in 5, the fingers and hands in 4, the toes in 2. Only one knee was affected in 6 cases. In 2 all the joints more or less were affected.

SYMPTOMATOLOGY.—The signs of articular disease in hæmophilia have been divided into three periods by Kœnig—effusion, chronic arthritis, and deformity. Suddenly and without apparent cause the joints become swollen and painful and movements impossible. The synovial membrane is distended with abundant effusion, its *culs de sac* are completely filled, and the limb is semi-flexed. Palpation of the joint is painful. Puncture shews the presence of blood. There are no signs of inflammation: the skin is smooth and shining, but there is no redness, heat, or œdema. Two or three days later there may be ecchymosis in the neighbourhood of the joint. Some writers describe slight elevation of temperature during the articular attacks. The duration is short, symptoms begin rapidly and in a few hours

attain their maximum; at the end of 24 to 48 hours effusion diminishes, and in 8 to 14 days the articulation has assumed its normal characters. A remarkable point is the frequency with which a joint may be affected. In one case described by Tardieu the patient had 31 separate attacks in 10 years. In another described by Meynet not a month passed from the age of 10 to 18 without an attack. The first attack may leave the joint perfectly normal, and even as many as 20 or 30 attacks may cause little appreciable damage. In other cases marked pathological changes are induced early.

Second Period.—This is characterised by chronic inflammation of the articular tissues. Resolution is incomplete, some fluid remains in the joints, and the successive attacks lead to proliferation of the periarticular fibrous tissue and the synovial membrane becomes thickened and rough. Finally the adjacent muscles become affected and the segments of the limb above and below the joint atrophied. The knee is enlarged, the normal hollows disappear, and the thigh and leg atrophy. In fact the signs are those of hydrarthrosis. The symptoms are however much less marked, pain is never prominent, and there are no tender places. The limb can be used to a certain extent without much pain, but movement is diminished. On passive movement creaking and rubbing can be obtained. The presence of lesions of the hip and shoulder are less easy to ascertain, but atrophy of the surrounding muscles should draw attention to these joints. This period of chronic arthritis is frequently interrupted by acute exacerbations with pain and effusion. After each attack the joint is less useful than before till finally the third stage is reached. But although hæmarthrosis may

affect any joint, usually only one or two become disorganised.

Third Period.—The proliferating fibrous tissue surrounds the joint like a case. Muscular atrophy progresses, and retraction of some of the periarticular muscles causes marked deformity. Thus more or less ankylosis renders the limb useless. Such changes are most frequently found in the knee and may even simulate bony ankylosis. Radiography shows that the articular surfaces are separated with subluxation of the tibia and the femur. Next in frequency the elbow shows the most deformity, assuming a right angle, and there are atrophy of the muscles and loss of power in the arm. Examination of a joint shows general thickening of the synovial and fibrous tissue. According to some osteophytes may be present but the writer considers these are composed of fibrous tissue. Purulent changes are exceptional and the writer quotes only one case in which pus was found.

Interstitial hæmorrhages may occur anywhere and spontaneous ecchymoses are frequently observed. Some grave forms with severe intra-articular hæmorrhages are seen during the first months of life. Such children rarely live beyond the sixth or seventh year; in fact they generally die in the second. The ordinary form of medium severity is the most frequent. It is in the fourth or fifth year that arthropathic changes most frequently occur and they may be preceded or accompanied by epistaxis, hæmaturia, etc. The hæmorrhages diminish on the appearance of articular effusion. These patients generally die about the twentieth year but if they live longer the hæmorrhagic tendency diminishes and may even disappear.

A benign form, which is however rare, is that most usually seen in women. In such cases

traumatism may produce somewhat profuse hæmorrhage. Ecchymoses are common. Menstruation is profuse and parturition is accompanied by dangerous hæmorrhage. Articular changes are however extremely rare and at the most consist in some joint pain.

PATHOLOGICAL ANATOMY.—The interior of the affected joints is red and contains a yellowish-brown serous exudate. The synovial folds are chocolate-coloured. There are marked thickening of the periarticular fibrous tissue and erosion of the articular cartilage. The fluid in the joint contains flocculent debris. In one case recorded by Tilman a number of loose bodies was found in the knee joint. No bony lesion has so far been described. In the more severe cases the same hæmatinic pigmentation is present; the cartilages show greater destruction; the capsule is thicker and more indurated; and the joint is filled by partially disintegrated fibrinous deposits. In such cases there is atrophy of the ends of the bones, and radiographs show that they are unduly porous. Thus the characteristic lesions are impregnation of the synovial membrane with blood pigment, producing first red, later brown discolouration, thickening of the capsule, destruction more or less complete of the articular cartilages, and finally atrophy of the bony extremities.

PATHOLOGY.—The joint changes seem due to the repeated articular hæmorrhages which cause a kind of aseptic arthritis ending in ankylosis of the joint. There is a difference of opinion as to the exact seat of the hæmorrhage. According to some it occurs into the joint, according to others into the soft parts surrounding it. The hæmorrhage seems to arise from a slight tear of some tissue ligamentous or otherwise, which is caused by

some trivial accident. Later the tendency to bleeding into the joint becomes more marked.

DIAGNOSIS.—In sporadic cases the diagnosis of joint alterations may be difficult. Among conditions to be differentiated are arthritis (with purpura) which may occur in measles, scarlet fever, diphtheria, etc. The general features of the case, the simultaneous involvement of the joint, and the absence of previous attacks will point to the diagnosis. Infantile scurvy may be mistaken for hæmophilic arthropathy, owing to rapid swelling, subperiosteal hæmatoma, pain, and loss of function. The age at which it occurs, namely, between 14 and 18 months, is important in diagnosis, for, as already stated, hæmophilic arthropathy occurs later. The characters of the swelling, and a careful estimation as to the bone affected, namely, the extremity of the long bones rather than the joint, aid in diagnosis. Arthropathy in the course of some nervous disorders causes some difficulty, but as a rule they occur late. (Hæmophilic arthropathy has been mistaken for tuberculosis. In a boy, aged 10, "quiescent tuberculous arthritis" of the knee was diagnosed. Resection was performed, and death occurred from uncontrollable hæmorrhage, the operator discovering too late that he was treating a hæmophiliac.—"REVIEW," VOL. II., p. 223.)

TREATMENT.—The important rule is not to operate, notwithstanding the very grave appearance of the joints. Several cases are recorded in which a joint has been excised with the result that the patient lived but a few hours. It is recommended to immobilise the affected joint with splints, taking care that no faulty position be maintained. Ice may be applied externally, and at times is most beneficial. If there is much pain

the usual sedatives may be administered, but the chief treatment is immobilisation combined with compression. The question whether the effused blood should be withdrawn by aspiration has often been discussed. In the opinion of the writer it should not, for, as stated above, the subsequent changes may not be severe, and mere puncturing the joint may be followed by dangerous consequences. Massage as the means of treating muscular atrophy is contraindicated as it is likely to cause hæmatoma. When there is a tendency to ankylosis and serious deformity treatment is difficult. Before the age at which the hæmorrhagic tendency disappears interference is contraindicated. Ankylosis in a fairly favourable position is best left alone; only when marked malposition causes great inconvenience is interference necessary. Adhesions should not be suddenly broken down. This must be done very slowly and by means of some apparatus, as that of Gocht and Manteifel. If the patient has passed the age of 30 and hæmorrhages have not been noted for some time means may be taken to restore a certain amount of mobility to the joint.

AMERICAN JOUR. OF MED. SCIENCES,
April, p. 620.

Albuminous Expectoration after Paracentesis Thoracis.

By DAVID RIESMAN, M.D.

Albuminous expectoration is an exceedingly rare complication of paracentesis thoracis. The first case was described by Pinault in 1853. The patient was a man, aged 34, who had had for 3 months left pleural effusion. Three litres of fluid were

removed with instant relief to the dyspnœa. In the evening the dyspnœa returned and he expectorated large quantities of albuminous fluid—altogether about a pint. Subsequently a number of cases has been recorded.

A woman, aged 48, had suffered from cough and occasional attacks of dyspnœa for 6 months. For some time there had been slight dysphagia. There were signs of right pleural effusion. The neck was greatly enlarged, and the natural depressions were obliterated. Above the inner end of the right clavicle a large hard gland could be felt. Exploratory puncture yielded a syringeful of clear serum. On Nov. 11 paracentesis in the seventh interspace and posterior axillary line yielded 3 pints of somewhat turbid, yellowish fluid. After a little less than a quart had been removed the patient began to cough. At first the cough was dry, but towards the end of the tapping a little frothy fluid was brought up. The face became blue and the cough more severe, therefore the paracentesis was stopped. In the next 6 hours about 5 ounces of a turbid, amber-coloured fluid, covered with a layer of froth half as thick as the fluid and containing a few streaks of blood, were expectorated. At the end of this period the patient was much more comfortable than before the tapping. The temperature was 99·1°, the pulse was 108, and the respirations were 44. The sputum, but not the cough, had diminished. Moist râles were heard over the whole of the right lung. Next day there was a little cough, the dysphagia had ceased, and there was good resonance over the right lung. On Nov. 24 paracentesis was again necessary. About a quart of fluid was removed. Severe cough again occurred, but there was only a little tenacious sputum. A large hard gland

had appeared above the left clavicle. There was dulness over the sternum, which extended about 2 in. beyond the left sternal border. Tumour in the anterior mediastinum, probably sarcoma, obstructing the return of blood from the right pleura, was diagnosed. The expectorated fluid was gelatinous and coagulated on boiling into a solid mass. On Dec. 6 aspiration yielded more than 3 pints of fluid. Severe spasmodic cough, but no albuminous expectoration, followed. Death occurred on Dec. 19. At the necropsy sarcoma of the anterior mediastinum was found.

Albuminous expectoration seldom occurs during the paracentesis, but generally after an interval of from a few minutes to half-an-hour. In rare instances the interval was 2 hours; in a case reported by Pepper it was 18 hours. The feeling of comfort following the paracentesis is terminated by dyspnœa and cough. The cough rapidly becomes more severe, expectoration increases, and the patient experiences a sense of terrible oppression which compels him to sit up. Respiration is laboured, the face deeply cyanosed, the skin clammy, the pulse rapid and weak. Auscultation reveals the coarse and fine râles of pulmonary œdema. In mild cases the symptoms gradually subside, sometimes, however, not until a day has passed. In extreme cases fluid gushes from the nose and mouth in a constant stream, the patient suffering agonising dyspnœa, and not infrequently dying of asphyxia—drowned in his own secretion. The amount expectorated varies, not rarely a pint or even a quart is brought up in 2 hours. The duration of the attack is usually 1 to 2 hours, but in some cases it has been 6, 12, 24, and even 48 hours. On standing the fluid generally separates into 3 layers; the upper frothy, the middle opalescent and yellowish, and the lower more

viscid and containing a few whitish flocculi. The fluid varies in composition: sometimes it closely resembles the aspirated fluid, at other times it differs widely from it. Albuminous expectoration usually occurs after tapping acute effusions. In the majority of cases the amount withdrawn was inordinately large—2,000 to 5,500 c.c.—and usually the withdrawal was rapid. At the necropsy the principal feature was œdema of the lung on the affected side, sometimes of both lungs.

The expectoration appears to be due to pulmonary œdema. In favour of this view are the following facts:—(1) The onset occurs some time after tapping. (2) There are physical signs of œdema. (3) Œdema is the chief lesion found at necropsy. (4) Albuminous expectoration occasionally occurs in the absence of pleural effusion—in heart disease, emphysematous asthma, and aneurysm of the aorta. (5) It has occurred in cases of empyema. The compressed lung is suddenly released from pressure and there is a great afflux of blood. A sort of “congestion by recoil” occurs. The vessels have become more permeable in consequence of the prolonged compression. Transudation occurs into the air vesicles and thence into the bronchi. The principal cause seems to be too rapid or too great withdrawal of fluid. Serious heart disease and morbid conditions of the opposite lung hindering expansion are predisposing causes. In all cases, and particularly when these complications exist aspiration should be performed slowly. If the effusion is large the amount drawn off at one time should be moderate.

TREATMENT.—The cough is usually so intense that morphine, in spite of the apparent contraindication, is necessary. It may be advantageously combined with atropine. Counterirritation with mustard or by dry cupping may be employed.

MÜNCH. MED. WOCH., Feb. 25, p. 318.

Epilepsy and Acute Circumscribed Œdema.

By Dr. C. VON RAD.

A painter, aged 47, came under the writer's care in Nov., 1899. For 3 years he had frequently suffered from rheumatism, but had been otherwise healthy, and had never had plumbism or syphilis. There was no family history of nervous disease and he had 9 healthy children. In Aug., 1899, he had an epileptic fit, and in Oct. 2 others. The tongue was bitten but there was no enuresis. The fits began without aura, with pallor of the face and muscular twitchings, and lasted a few minutes. Next appeared attacks of vertigo, which often recurred 3 or 4 times a day, and were most frequent in the morning. In these attacks consciousness was dimmed but never completely lost. In the middle of Nov. angio-neurotic œdema appeared. Towards 6 a.m. every morning the skin of the head swelled, slowly attained a maximum size, and 3 or 4 hours later began to subside. The œdema involved the face, scalp, and upper part of the neck, which were reddened and extremely painful and tender. The eyelids were not especially swollen. Simultaneously there were mental dulness, general *malaise*, and severe cardiac oppression. Usually the voice was hoarse and devoid of resonance and speech was laboured. The tendon reflexes, especially the left knee-jerk, were exaggerated. The internal organs appeared to be healthy, and the urine was free from albumen and sugar. The pulse was irregular and usually only 40 or 50. Bromides produced some improvement in the vertigo but none in the œdema. Towards the end of Dec., however, the œdema disappeared spontaneously and was replaced

by frequent attacks of pain and tenderness in the gastric region, accompanied by a sensation as though the stomach and œsophagus were swollen. During these attacks deglutition was impossible, and there was complete anorexia with nausea and retching. The gastric contents removed by a tube contained free HCl. The bowels acted regularly and there was no diarrhœa. The cardiac action was still irregular, and bradycardia alternated with tachycardia. The patient was not seen again till Oct., 1900, when the gastric symptoms, though never completely absent, had so far improved that he resumed work; the cardiac action was regular. He was then lost sight of until April 25, 1901, when he stated that both legs had become swollen a fortnight before. The œdema, which extended from the ankles to the knees, soon subsided. The urine was normal.

The intermittent recurrence of swellings of the skin and mucous membranes and the absence of organic disease of the heart and kidneys pointed to acute angio-neurotic œdema ("REVIEW," Vol. II., pp. 595 and 604). The localisation of the œdema in the face is common, but it is usually painless, as was that which occurred later in the legs. The hoarseness was probably due to œdema of the larynx, and the gastric symptoms and dysphagia to œdema of the gastric and œsophageal mucosa ("REVIEW," Vol. I., p. 207). According to Schlesinger gastro-intestinal symptoms are characteristic of the family form of acute œdema, but in this case no other members of the family were affected. The œdema may affect different organs in different attacks. In this patient it attacked first the face, then the mucous membranes, then the legs. Bradycardia, which has not been noted previously, was a temporary phenomenon.

The fact that the first attack of œdema had been preceded $3\frac{1}{2}$ months before by epilepsy and epileptic vertigo is of especial interest. The combination is extremely rare. Ullmann (*Archiv f. Schiffs u. Tropen-hygiene*, III., 1899) has reported a case of a ship's fireman who, while suffering from extensive œdematous swellings of the skin and larynx, was seized with fits and passed into the status epilepticus. Possibly the fits were due to meningeal swellings, analogous to those of the skin and mucous membranes. In the case related above the fits did not persist, and it could not be assumed that epilepsy was the primary disease on which an angio-neurosis had been grafted. Rather it was an incident in the course of a vaso-motor tropho-neurosis, and of equal significance to the œdema of the skin and mucous membranes. It is of interest that the patient, like many other subjects of circumscribed œdema had had rheumatism.

LANCET, May 3, p. 1243.

"Idiopathic," or Congenital, Hereditary and Family Hæmaturia.

By LEONARD G. GUTHRIE, M.D., F.R.C.P.

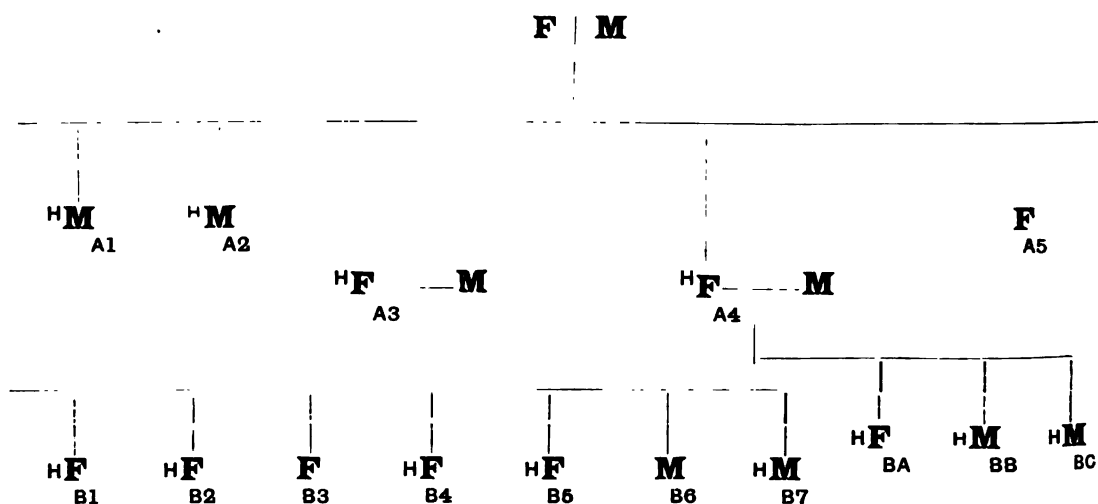
Idiopathic hæmaturia is not mentioned in text-books, nor has the writer found any reference to it in medical literature. Dr. W. H. W. Attlee, however, has recorded 3 cases of recurrent hæmaturia in one family (*St. Bartholomew's Hosp. Jour.*, Dec., 1901). The "essential renal hæmaturia" of Debairieux, in which hæmorrhage occurs from apparently healthy kidneys, is doubtless closely related to idiopathic hæmaturia, but lacks the hereditary, congenital, and familial characters of the latter.

The writer knows of the existence of idiopathic hæmaturia in 12 persons. Eight of

these are brothers and sisters or first cousins. Their mothers are 2 sisters who are themselves subject to the complaint. These sisters had 2 brothers, both of whom were affected. The hæmaturia was thus inherited only on the maternal side, but Dr. Attlee's cases suggest that it may also be inherited on the paternal. In all the writer's cases it appeared to be congenital or was noticed soon after birth. The first generation of the two families mentioned consisted of 2 brothers and 3 sisters, all of whom, except one sister, were liable to hæmaturia from birth. The 2 brothers died between 20 and 30 years ago, aged 4 and 11 respectively. The exact cause of their deaths cannot be ascertained. The 2 sisters affected are now aged 40 and 30

respectively. The elder has 7 children, of whom 4 girls, aged 18, 15, 13, and 10 years, and 1 boy, aged 6 years, are subject to hæmaturia, whilst 1 girl and 1 boy escaped. The younger sister has 2 boys, aged 8 and 3 respectively, and 1 girl, aged 11 years, all of whom are affected. The third sister, who is free from the complaint, is unmarried. The eldest daughter of the elder married sister suffers from eczema and spasmodic asthma as well as from hæmaturia. The third daughter has had attacks of epistaxis and hæmatemesis but no hæmaturia. Gout and rheumatism are said to exist on the maternal side of these families. The relationship of the persons affected is shown in the annexed table.

TABLE OF DESCENT.



F=female and M=male. The first pair had 5 children marked A₁, A₂, and so on. Of these 5 children those marked H suffered from hæmaturia. Two females of the A group—namely, A₃ and A₄ both being hæmaturic, married and had children. A₃ had 7 children marked B₁ and so on. Of the 7 children 5 are hæmaturic. A₄ had 3 children marked BA, BB, and BC, all of whom are hæmaturic.

The characteristics of idiopathic hæmaturia are as follows:—1. It is hereditary, familial, and congenital. 2. It may be persistent for many years, but may vary in extent. In some cases it may cease for a time, but in all it is apt to recur or to increase in exacerbations.

In one case the urine examined almost weekly for upwards of 2 years has never failed to contain blood visible to the naked eye and to give a marked reaction with ozonic ether and guaiacum. Its colour varies from that of old gold tinged with red to the bright

scarlet of oxyhæmoglobin. In another case blood is always present, but can be detected only on microscopic examination except during exacerbations. At these times the urine may resemble almost pure arterial blood. It is not "smoky" but is "red," the colour being due to oxyhæmoglobin not methæmoglobin. Normal red blood corpuscles and blood casts can always be found under the microscope, hyaline casts never. The amount of blood passed during exacerbations is always far greater than is ever seen in cases of nephritis, and resembles in profuseness that of renal calculus or tumour. 3. All cases are liable to paroxysmal exacerbations which are usually accompanied by slight pyrexia, malaise, headache, vomiting, and slight pains in the back or limbs. The exacerbations are often attributed to "catching cold" and are associated with slight bronchial catarrh, or with trivial ailments, such as toothache, earache, or tonsillitis. In some cases articles of diet—such as black currants, asparagus, strawberries, claret, and perhaps rhubarb—have been held to produce them. But the exacerbation may occur without complications and in the absence of special causes. The duration of these exacerbations is usually several days but seldom exceeds a week or at most a fortnight, and after the first few days the blood gradually diminishes. They have no law of periodicity. They may occur at intervals of weeks, months, or years, but they appear to become less frequent after the first decade. They occur with extreme suddenness by day or by night and are not influenced by posture. Extremes of hot or cold weather seem to give rise to them. 4. There is neither œdema, ascites, nor the cardio-vascular changes of nephritis. Except during exacerbations the subjects are in perfect health. There may be temporary anæmia after an exacerbation. 5. The

hæmorrhage is not due to uric acid or oxalates. A few crystals of these substances may often be found, but free gravel is never passed, neither is there any excess of uric acid in solution. 6. The s.g. of the urine varies from 1015 to 1030. The urine is nearly always albuminous, the albumin varying from $\frac{1}{20}$ to $\frac{1}{4}$ of its bulk. Sometimes it is in accordance with the amount of blood present, at others it exceeds it. Nucleo-albumin is usually passed. None of the subjects of idiopathic hæmaturia is a "bleeder" or suffers from Raynaud's disease or from purpura. Scarlet fever, calculus, new growth, congenital syphilis, renal tuberculosis, and all forms of nephritis can be excluded. The kidneys are not movable, palpable, or tender.

CASE 1.—A boy, aged 6, has been under observation 3 years. From the first his urine was noticed to be blood-red from time to time. There was nocturnal and diurnal enuresis with frequency of micturition. He is a healthy-looking, ruddy and chubby child, full of life. The heart and pulse are normal, the kidneys are not palpable. The urine examined at almost weekly intervals for about 2 years has never been free from blood. The s.g. is from 1015 to 1030. The colour varies from reddish old gold to bright blood-red. The blood is always discernible to the naked eye. The colour is due to oxyhæmoglobin. The deposit usually contains a few crystals of uric acid or oxalates, many red blood corpuscles and blood casts, but no hyaline casts. The total quantity passed is not above the average. Albumin is always present in quantities varying with the amount of blood present; the average is about $\frac{1}{2}$. The urine almost always contains nucleo-albumin. During the past 3 years there have been periods of about a week every 2 or 3 months in which the blood is greatly

increased. Then there is usually slight malaise, the tongue becomes furred, and he may be restless and scream in his sleep. The exacerbations of hæmaturia are often preceded and accompanied by enuresis and frequency of micturition. They are associated with "catching cold" or some slight ailment such as toothache or earache. Extremes of hot or cold weather always render him more liable to attacks. The hæmaturia is not more marked in diurnal than in nocturnal urine. The attacks do not seem to be induced by any particular articles of diet except by strawberries and asparagus. Hazeline, oil of turpentine, calcium chloride, and gallic and sulphuric acids have been used without much effect. The only drug which seems to cut short the attacks is substantia suprarenalis in $1\frac{1}{4}$ -gr. doses 3 or 4 times a day. Rest during the exacerbations seems all that is necessary.

CASE 2.—A girl, aged 15, sister of the above patient, has been under observation for 3 years. The urine examined on many occasions has never failed to contain blood and albumin, but usually the blood is less in amount than in the previous case, and there is rather more albumin. The average amount of albumin is about $\frac{1}{10}$; sometimes it falls to $\frac{1}{20}$. Nucleo-albumin is also present. As a rule the blood can be detected only by microscopic examination, when fragments of blood casts and blood corpuscles are found, but no hyaline or true granular casts. The s.g. is from 1015 to 1025. The last exacerbation occurred 2 years ago. The urine became darker and a night or two later she was violently sick and passed a quantity of bright scarlet urine which was practically pure blood. The tongue was brown and dry, the temperature was 102° , and she complained of headache but of no other pain. The temperature gradually fell

and the urine regained its normal appearance in about a fortnight. There was never any trace of oedema. She is a well grown and fairly healthy looking girl, though slightly anæmic. Black currants are said to induce major attacks of hæmaturia as in other members of the family.

The mother of the patients (Cases 1 and 2), who is now about 40, states that so long as she can remember she has been subject to such attacks as her children and that as a child she was in consequence always considered delicate. Her attacks are produced by taking black currants or claret and by ordinary slight ailments. The last severe attack of hæmaturia occurred 6 years ago.

Dr. Attlee has described 3 cases of recurrent hæmaturia in one family (*loc. cit.*). The patients were females, aged $5\frac{1}{2}$, $4\frac{1}{2}$, and 2 years and 4 months respectively. They were well nourished and appeared to be in perfect health.

The fact that the hæmaturia is congenital, or at all events noticed soon after birth, excludes all ordinary causes. The most reasonable supposition is that there is some inherent weakness or varicosity of the walls of the renal vessels leading to what has been called renal hæmophilia or renal epistaxis. Or the vaso-motor system may be at fault (angioneurosis), in which case the complaint may be grouped with cyclical or postural albuminuria. Mr. Hurry Fenwick has found varicosity of the papillary plexus in cases of painless unilateral hæmaturia in young adults and has cured them by papillectomy ("REVIEW," Vol. III., p. 231). But the hæmaturia is in no sense postural. The exacerbations occur as often during the night or whilst the patient is at rest in bed as by day when he is up and about.

MEDICINE.

Severe Hæmaturia from Movable Kidney.—Arthur T. Cabot, A.M., M.D. (*Boston Med. and Surg. Jour.*, March 6, p. 243).—Hæmaturia is not uncommon in movable kidney, but the blood is usually in microscopic amount, rarely in such quantity as to colour the urine. The following case in which the hæmorrhage was such as to induce serious anæmia is very rare.

A woman, aged 43, came under observation on April 6, 1901. For some years she had noticed, when tired, a dull pain in the abdomen and occasionally observed a little blood in the urine. In Dec., 1900, the urine was deeply coloured with blood. In March, 1901, it was almost black and contained clots. She was put to bed and given ergot and other hæmostatics, but the hæmorrhage did not diminish. In April the urine was of s.g. 1012 and alkaline; it contained between $\frac{1}{8}$ and $\frac{1}{4}$ per cent. of albumin and a large deposit of blood, mucus, and pus. Discomfort was experienced only during the passage of clots.

On April 8, when the writer saw the patient, she was propped up in bed in a half-sitting posture. She looked extremely pale and waxy and had a rapid feeble pulse. The bladder was examined with a sound, between which and a finger in the vagina its posterior and lateral walls were palpated with negative result. The right kidney was enlarged and low in the abdomen, the lower end being just above the pelvic brim. It could not be elevated by moderate force and the use of more was not thought advisable. The patient's posture was thought to favour downward displacement of the kidney and to aggravate the congestion. Her low condition was unfavourable to operation. She was therefore laid flat in bed and the foot of the bed was raised. For 36 hours the hæmaturia seemed greater than before. But after 48 hours it diminished and a

few hours later the urine was free from red colour. Three days later the foot of the bed was lowered to the floor for about 4 hours. Next morning hæmaturia appeared. After this the foot of the bed was kept raised until early in May, when the patient became tired of the position and was allowed to sit bolstered up in bed for 20 minutes daily. Hæmaturia, though far less than before, at once was noticed. After this the hæmaturia ceased and strength was rapidly gained. On May 20 nephrorrhaphy was performed. The kidney was much smaller than at the time of the former examination, being little if at all larger than normal. It could be pushed easily into its normal position. In Feb., 1902, hæmaturia had not occurred since the operation and the only complaint was of dragging pain in the right kidney when the patient lay on the left side.

Complications of Varicella.—H. Dauchez (*Archives de Médecine des Enfants*, April, p. 211).—Varicella is usually regarded as essentially benign, and without complications, but being a general infection, it may be accompanied by arthritis, pleurisy, nephritis, etc. Much depends on the general health. Thus, in an outbreak of varicella at the Maternity Hospital many newborn children of weakly constitution, succumbed. In 872 cases of varicella there were 17 cases of otitis media, and 34 of osteitis. Pleurisy, hydrarthrosis of the knee, multiple arthritis, and pyæmia have been described by Riale (See also "REVIEW," p. 227). Girode described a case of varicella in which streptococcic pseudo-membranous angina appeared on the third day, and was rapidly followed by orchitis and albuminuria (*Rev. des Mal. de l'Enfance*, 1893, p. 359);

convalescence was prolonged. Henoch described a somewhat similar case of angina, in which large numbers of streptococci and staphylococci were found in the throat, but no diphtheria bacilli; albuminuria also occurred. Henoch has even described a form of nephritis peculiar to varicella, and quotes 4 cases, of which 1 was fatal. Comby has found marked albuminuria in 42 out of 250 cases of varicella. In 3 of these there was nephritis. Rille has noticed acetonuria in several instances.

Confluent varicella is not more likely than discrete to be followed by albuminuria. The writer thinks that many cases of varicella show a tendency to become confluent if the skin has previously been irritated by some application such as iodine, yet no albuminuria occurs. In 9 cases of suppurative varicella, of which several were thought to be variola, there was slight albuminuria, and in 3 cases of suppurative varicella, observed by Marie and Thomas and Bezy, there was no albuminuria, notwithstanding the presence of staphylococci. In cases of albuminuria hyaline casts may be present. In varicella complicated by pyæmia death may occur after suppurative otitis media, cerebellar abscess, cerebro-spinal meningitis, pyæmic abscesses of the lung, etc. In these cases ordinary staphylococci and streptococci seem to be the dominant organisms. Albuminuria and renal complications are certainly rare in varicella. The writer has observed only 3 cases in 17 years.

See also "REVIEW," Vol. III., p. 607.

Acute Benign Pemphigus of the Mouth and Throat.—Dr. Monfort (*Rev. Hebdom. de Laryngol., d'Otol. et de Rhinol.*, March 22, p. 337).

CASE 1.—A man, aged 60, complained that for 3 days he had a sensation of burning in the throat. With a mirror he had seen a "blister" a little above the uvula. During mastication serous fluid rapidly escaped, leaving a wrinkled surface, so that when the writer

saw him there was simply localised redness which gradually disappeared. A year later recurrence took place: there were 2 or 3 bullæ on the soft palate. On pricking them a limpid watery fluid escaped. On neither occasion was there any eruption, and the general state of health was excellent.

CASE 2.—A man, aged 24, complained of sudden dysphagia and a burning feeling in the throat, especially on swallowing liquids. On the anterior aspect of the uvula, at the junction with the soft palate, was a bulla as large as a nut, filled with a somewhat purulent fluid, and surrounded by an erythematous areola.

CASE 3.—A woman, aged 30, had a burning feeling in the throat which came on suddenly while she was taking soup that appeared to be too hot. On the uvula were 1 large and 2 smaller black hæmorrhagic bullæ. The surrounding mucosa was normal. A gargle was prescribed, and 24 hours later the bullæ had become completely flattened. Four or 5 days afterwards there was no trace of the lesion.

CASE 4.—A soldier complained of pain in the throat, which had commenced by the sudden sensation of a foreign body there with pain on swallowing. On the soft palate was a blackish tumour like a leech gorged with blood, and on the uvula was a smaller similar tumour overhanging the root of the tongue. The swellings were incised and brownish blood-stained fluid escaped, to the great relief of the patient. Under emollient gargles recovery was complete in 3 days.

CASE 5.—A girl, aged 17, complained of pain in the right ear which was preceded 2 days previously by pain in the throat. On the palate were 2 swellings of the size of a lentil, which looked like empty bullæ.

The onset of this condition is generally sudden. Pain is felt on awaking in the morning, or during eating or drinking. Sometimes the onset is ushered in by the sensation of rupture of a foreign body in the mouth which is followed by the expectoration of

clear liquid or of a clot and blood. A most important characteristic of a pemphigus bulla is its isolation. Sometimes 2 bullæ may unite, but they never form groups as in herpes. The bulla is either round or oval and varies from the size of a lentil to that of a large almond. The surrounding mucosa soon shows a red areola. The bullæ are rarely single, usually there are 3 or 4. They may be found on the mucosa of the cheeks and lips, tongue, posterior wall of the pharynx, nose, epiglottis, or arytenoid cartilages, rarely on the tonsils. The most common site is the soft palate. The bullæ usually last but a few hours, sometimes 2 or 3 days and break spontaneously. After rupture there is a whitish or greyish opalescent wrinkled membrane with a ragged opening in the centre. In the hæmorrhagic cases the pellicle is brownish. There is little or no systemic disturbance and there is never glandular swelling or fever. One attack does not confer immunity.

The abrupt appearance of bullæ, or of the regularly round white patches which follow them, the almost complete integrity of the surrounding mucosa, and the absence of general disturbance are generally diagnostic. Burns may be eliminated by questioning the patient. Simple erythematous angina usually supervenes in the midst of febrile symptoms, and the onset is accompanied by rigors, headache, and malaise. The breath is offensive, the pain in the throat is severe, and deglutition is almost impossible. The faucial mucosa is dry and much inflamed, the tonsils are swollen, and there may be glandular enlargement. Herpes of the pharynx is always preceded by well marked prodromal symptoms—general malaise, headache, and fever. The vesicles are of the size of a pin-head and in groups of 4 to 10; they appear on the inner surface of the lips and cheeks, and on the lingual mucosa, palate and uvula, but particularly on the tonsils. Erysipelas may appear primarily or secondarily on the mucous membrane of the mouth and lips, pillars of the fauces, soft palate,

uvula, and posterior wall of the pharynx. It may be accompanied by bullæ, from the size of a lentil to that of a small nut, on the soft palate and uvula. Their duration is short and their evolution is almost the same as that of the bullæ of pemphigus. But their borders are not regular and the generalized inflammation and intense local pain differentiate erysipelas from pemphigus. In diphtheria membranes in the mouth and on the tongue are exceptional, and there are always pyrexia, general symptoms, and glandular enlargement. In facial zona the vesicular eruption is not always limited to the skin, but may extend to the mucosa of the cheek, tongue, and throat; it is accompanied by neuralgic pain and is always limited to one side. A syphilitic mucous patch may resemble the false membrane which follows the rupture of the bullæ of pemphigus, but the history of the roseola and the adenitis will remove all doubts. Potassium iodide and antipyrin may cause stomatitis with opalescent mucous patches like false membranes. The hæmorrhagic form must be diagnosed from hæmatoma and angioma of the soft palate.

See also "REVIEW," Vol. II., p. 92, and Vol. IV., p. 117.

Intestinal Myiasis.—D. M. Hutton, M.D. (*Liverpool Medico-Chirurg. Jour.*, March, p. 55).

CASE 1.—In Oct., 1894, a healthy man, aged 54, came to the Edinburgh Royal Infirmary, complaining of profuse diarrhoea, and bearing with him a jar of fæces in which were actively swimming 3 worm-like creatures. Eight days before he drank from a spring. Next day profuse and watery diarrhoea began. He took brandy and then chlorodyne, but without effect. His diet during the week consisted of little more than rice and water. The motions were of a pea-soup appearance, and there were as many as 30 in the day. On the morning of admission he noticed two worm-like creatures swimming in one of the stools, and a third was passed later in the day.

They were about an inch in length and nearly white. They were found to be the rat-tailed larvæ of the drone fly (*crystalis tenax*). A brisk purge was given, but no more were passed.

This is the only recorded case of larvæ of *crystalis tenax* in the alimentary tract. The large size of the maggots shows that they must have lived in the bowel for perhaps 2 weeks.

CASE 2.—In Jan., 1897, the writer saw a child, aged 18 months, who was reported to have passed a "strange worm" alive in her motions, and to have vomited a similar "worm," also alive, a day or two previously. There were diarrhoea and abdominal pain. Under aperients and antacids recovery soon took place. The child had sucked turnips and other vegetables. The larva was determined to be probably that of *agrotis segetum*, which feeds on turnips and other vegetables.

See also "REVIEW," p. 214



Thrombosis of the Inferior Vena Cava following Pneumonia.—L. Lipman-Wulf (*Deutsche Med. Woch.*, Apr. 10, p. 262).—A man, aged 38, came under observation in the summer of 1901 for a varicose ulcer of the left leg. In 1886 he acquired syphilis. In 1893 he had a severe attack of right lobar pneumonia. While convalescent the left leg suddenly swelled from the toes to the hip. When he got up 6 days later there was a varix on the outer side of the left popliteal space (this is now as large as an apple). A few days later diffuse œdema of the right limb appeared. During the next 3 months the patient was employed in carrying furniture, and at the end of that time the varices had attained their present extent. (FIG.)

Thrombosis may follow any of the infective fevers, most often influenza, and most rarely pneumonia. In this case the thrombus probably first occluded the left common iliac vein, and thence spread to the inferior vena cava and right common iliac vein. A collateral circulation

was established on the right side through the anastomosis of the inferior epigastric vein with the superior epigastric and internal mammary veins and with the portal system, and of the circumflex iliac vein with the long thoracic, axillary and subclavian veins. Though the superficial veins of both lower limbs were greatly dilated, there were no varices on the left side of the trunk; possibly the circulation was carried on by deeper paths such as the spermatic veins. It is not uncommon however, for the superficial collateral circulation in thrombosis of the inferior vena cava to be unilateral, and cases have been observed in which no superficial collateral circulation was established. Since the veins round the umbilicus, which belong to the portal system, were enlarged on the right side, the question arose whether the portal system was not partially obstructed by a thrombus. The absence of intestinal symptoms negated this. The fact that the varices and venectases were due to occlusion of the deep veins rendered operative treatment useless.

Fatal Suppression of Urine from Acute Nephritis without Uræmic Symptoms.—

W. J. Hadley, M.D., F.R.C.P. (*Brit. Med. Jour.*, May 10, p. 1144).—The following case shows that the symptoms of non-obstructive may be as latent as those of obstructive suppression of urine.

A woman, aged 42, was admitted to hospital. She had been ill 9 days with "cold on the kidneys." For the first 2 days there had been slight general œdema, vomiting, and pains in the back. These symptoms passed off, although she had passed no urine for 5 days. There were slight vomiting and giddiness and night starting. The heart sounds were practically normal, there being a slightly exaggerated second aortic sound, although the pulse tension was low. The catheter showed that the bladder was empty. No history of renal colic could be obtained. No changes were visible in the fundi.

Hot-air baths and hypodermic injections of pilocarpine caused profuse perspiration; the bowels acted only slightly after giving elaterium and croton oil. The patient was bled to the extent of a pint, and 4 pints of saline solution were infused. She lived 3 days in hospital, during which she passed no urine, making 8 days in all of total suppression. She took plenty of milk, complained of nothing, and was bright and cheerful to the end. At the time of death she was talking: whilst taking milk respiration suddenly ceased, although there had been no previous dyspnoea. She never had headache, drowsiness, twitchings, or mental incapacity. Vomiting was only trifling, and did not prevent a large amount of milk from being taken. The pulse ranged between 80 and 95; the temperature, although it once rose to 100·2°, was usually at or below normal.

NECROPSY.—The body was well nourished and there was no œdema. The right pleural cavity contained 10 oz. of fluid; both lungs were very œdematous. The heart was not hypertrophied. The kidneys were enlarged. The capsules could be peeled off, leaving smooth surfaces; there were small hæmorrhages into capsules. The sub-

stance of kidneys was deeply congested, but not hæmorrhagic; the cortex was much increased, and paler than the medulla (acute nephritis of short duration). There was no obstruction in any part of the urinary tract.

This case is unusual but not unique. Although patients with obstructive suppression, usually live much longer and show fewer uræmic symptoms than those with non-obstructive suppression there is a fair number of cases of suppression solely from the changes in the kidneys in which the patients do not succumb "in a few hours or in a day or two," and of whom it cannot be said "symptoms of uræmia are prominent." Indeed, as in this case, there may be no so-called uræmic symptoms.

Scurvy in a Rickety Boy.—George Carpenter, M.D. (*Lancet*, May 3, p. 1246).—A

boy, aged 5½, was admitted to hospital on Feb. 24th, 1902. He was breast-fed and was not weaned until the age of 18 months. At 12 months he began to walk and was found to be rickety. According to his mother he was always "too heavy for his legs," which gradually became more and more bent. About 9 months previously he began to complain of pain in the arms and chest and especially in the legs, and he did not like to be touched. He last walked 6 weeks previously, when he hobbled from one chair to another, but latterly he had reclined in one position, either in bed or on a chair. He had been gradually getting paler. For about a week he had cried on passing urine but no blood had been detected in it. He had always peculiar tastes as to food. He would eat bread-and-sugar and occasionally a little butter, but he objected to milk, though he would drink tea with milk. He ate fried or roast meat but the meat had to be dry and he would not touch gravy or meat-juice. Vegetables he always refused—they made him sick; he never ate fruit. He liked suet pudding and took milk-puddings occasionally.

He was a well-nourished, placid, anæmic child who remained quiet if undisturbed, but when the couch was moved or he was approached for examination he cried out. The legs were flexed on the thighs and the thighs on the abdomen. The trunk and limbs, and especially the legs, were very tender. The front of the left shin had lost its sharp outline and was nodulated and the bone was bowed. The right tibia was decidedly bowed and its free edge was thickened. The mucous membrane of the mouth was pale. At the junction of the incisor, canine, and first temporary molar teeth with the gums was a thin broken line of purple discolouration which broadened out at the last mentioned teeth, and over the second molar expanded into a purple epulis-like overgrowth of the gums which almost obliterated these teeth. The gums did not bleed on pressure. There was a small bruise on the left shin. The ribs were beaded. The ends of the wrists were knobby and the ankles and knees were obviously enlarged. The long bones of the lower limbs were bent and the curves fitted into one another when the limbs were in a position of rest. The femora were bent antero-posteriorly at the junction of the lower and middle thirds and the tibiæ at the lower third. The red blood corpuscles numbered 4,733,000 per c.mm. The hæmoglobin was 60 per cent. Under the varied diet he was compelled to take, with orange-juice, the gums quickly recovered, and by March 16th the limbs were free from tenderness, but he could not stand without assistance.

This case of characteristic scurvy of infantile type is interesting by reason of the age of the patient. Such cases mostly occur between the ages of 7 and 14 months. The youngest case recorded was in an infant of 3 weeks; it was breast-fed and the case ended fatally. After the age of 2 such an instance as that just recorded with typical gum lesions is rare. Some of the cases of "*simple hæmaturia*" in older children, as also some cases of purpura, mostly unaccom-

panied by gum lesions and thereby passing unrecognised, are solely due to a deficient dietary, and are therefore scorbutic. At the Soc. for the Study of Diseases in Children a case of paroxysmal hæmaturia in a boy, aged 9, was shown. The subsequent development of spongy gums proved that it was a case of scurvy. Further, so marked a case of active rickets at this period of life is unusual, although its association with scurvy must be looked upon as an accident. Children with scurvy are not necessarily rickety, though rickets is found in about half the cases; nor are they necessarily anæmic, though they are more often so than not.

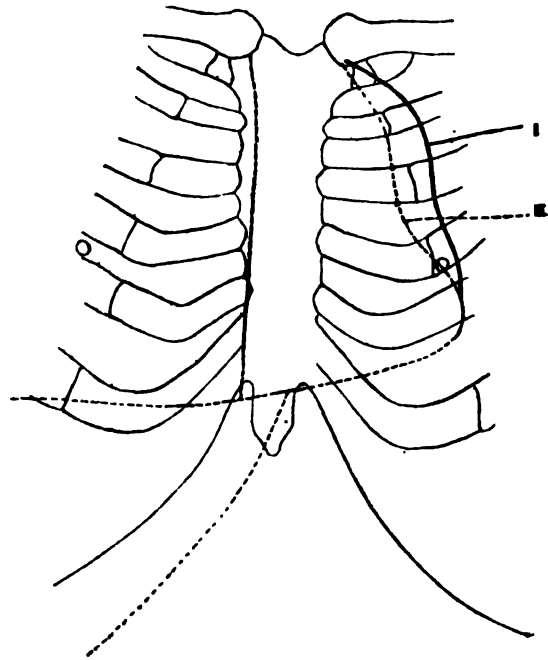
The chief, if, indeed, not the only, cause of infantile scurvy is dietetic. In this case the dietary was restricted and unnatural by reason of the absence of fresh vegetables or their equivalent. The patient, however, took milk occasionally in the shape of milk-puddings and with tea, and, according to his mother, had meat twice a day, though he liked his meat "dry." No single article of diet is capable of producing scurvy with certainty, though the various proprietary foods and milk-preparations are flagrant offenders. The personal element is always a factor. Thus several children of a family may be suitably reared on a diet which proves eminently scorbutic to one. Even newly-born infants at the breast have developed scurvy. Yet fresh breast milk is deemed eminently anti-scorbutic and is free from the ptomaines of decomposition, though in other respects it may be quite unsuitable as a food for a child. Undoubtedly many articles of diet which have been administered for long periods are capable of producing scurvy in some infants and, equally undoubtedly, they will not do so in the majority of others. Infantile dietetic errors are the rule, but cases of scurvy are exceptional. Thus a diet of sterilised milk, simple boiled milk, pasteurised milk, pasteurised percentage milk mixtures, peptonised milk, desiccated milks, the

numerous proprietary foods, and cereal gruels combined with the above milk-preparations, have in some cases produced scurvy.

Sinistro-Cardia from Pulmonary Disease.—M. A. Chauffard, (*Bulletins de la Soc. Méd. des Hôp.*, p. 132, 1902).—The patient was a man, aged 21, whose mother died from phthisis. At 10 he had an attack of hæmoptysis. Since then he had always been "short of breath," and dyspnœa followed the slightest effort. At 20, he noticed streaks of blood in the sputum, and two days later had severe cardiac pain. The attacks became more frequent, and were apparently excited by digestion or fatiguing work. They consisted of intense cardiac pain, which radiated towards the left clavicle and shoulder joint, but did not extend down the arms, and were accompanied by 'palpitation' and dyspnœa. They lasted 15 to 20 minutes, and then ceased suddenly. There were generally 3 or 4 during the 24 hours, but at times none occurred for several days. In these intervals there was a painful cough with muco-purulent expectoration and dyspnœa.

At the left apex there were prolonged expiration and broncophony. The tubercle bacillus was not found in the sputum. The heart was displaced to the left, and the apex was retracted. Two inches to the left of the sternal border distinct pulsations could be felt. They consisted of a systolic 'thud' and a diastolic click. Radioscopy showed that the left lung was much contracted and abnormally opaque. The left diaphragm was higher and its excursions considerably less than those of the right. During deep inspiration the mediastinum was entirely displaced to the left side of the thorax. The right border of the left heart shadow, which was parallel with the right border of the vertebral column during expiration, disappeared behind the vertebral shadow on deep inspiration. The summit of the left lobe was very dull.

Radioscopy thus showed left pulmonary sclerosis, most marked at the summit, with



I.—Position of heart and mediastinum during inspiration, determined by percussion and radioscopy.
E —Position of same during expiration.

mediastinal adhesions; sclerotic mediastinitis with pericardial adhesions; traction of the large vessels, particularly of the pulmonary artery, to the left. Although the bacillus was not found, the lesions were probably tuberculous. As a physical sign, the mediastinal displacement during inspiration is pathognomonic. It can be demonstrated by light percussion, but radioscopy is more reliable.

Sinistro-cardia has rarely been met with and dextro-cardia is relatively uncommon. Their recognition is however of much importance in regard to prognosis, as when once the condition is established, little compensation can be provided and cardiac failure and arrest soon prove fatal.

Lactescent Ascites and Atrophic Cirrhosis of the Liver.—M. A. Souges (*Bulletins de la Soc. Méd. des Hôpitaux*, March 21, p. 290) adopting the nomenclature of M. Jousset would substitute the term "opalescent ascites" for those of "chylous" and "chyliform ascites"

because it describes the fluid without implying any pathological theory of its origin. M. Jousset applies the term "opalescent" to fluids of all shades of colour intermediate between milky-white and colourless, and the term "lactescent" to the highest degree of opalescence. Opalescent ascites associated with atrophic cirrhosis of the liver is rare. In the following case the ascites was lactescent.

A man, aged 61, addicted to alcohol, was admitted to hospital on Dec. 26, 1901. He had been in good health until the previous June when he began to lose appetite and strength. In Aug. he noticed that his abdomen was enlarging. He was much wasted and his complexion was earthy. There was considerable ascites. The urine contained urobilin and a little reddish-brown pigment. A few days after admission there was œdema of the lower limbs and scrotum. On Jan. 20, 1902, 13 litres of lactescent fluid were removed by paracentesis abdominis. On Feb. 12 paracentesis yielded 15 litres of milky-white fluid. But the general condition became worse and death took place on the 16th.

NECROPSY.—Ten litres of fluid similar to that which had been removed during life were found in the peritoneal cavity. The liver was atrophic and weighed 1270 gm.; scattered through it were hard yellow granulations. Microscopic examination showed annular extra-lobular cirrhosis. Some of the hepatic cells were in a state of fatty degeneration. The abdominal lymphatic vessels were not dilated and there was no sign of perforation. Behind the aorta and between the pillars of the diaphragm was a "pocket" which communicated with the thoracic duct and appeared to be the receptaculum chyli. It was filled with blood-clots which must have formed an obstacle to the flow of chyle. The lactescence of the ascitic fluid was not modified by centrifugalising and when allowed to stand in a tube the fluid did not separate into layers but a slight reddish deposit of red blood corpuscles formed. Microscopically the fluid showed numerous small granules and

refractile vesicles which did not stain and 12,000 mononuclear leucocytes, mostly lymphocytes, to the c.mm. Ether did not render the fluid clear. Chemical analysis gave per litre in gm. 8.1 albumen, 0.25 fibrin, and 7.32 globulin.

M. Jousset could collect only 14 cases of atrophic cirrhosis of the liver with opalescent ascites. Obstruction of the thoracic duct was found in some, but it is evidently only a predisposing cause. Ligature of thoracic duct may be performed in animals without producing effusion of chyle or even dilatation of the chyle vessels. M. Souques suggests that in cases of cirrhosis of the liver the alcohol directly affects the chyle vessels at their origin, causing inflammation and diapedesis of leucocytes into the peritoneal cavity already filled with ascitic fluid, where they are destroyed, giving rise to an emulsion.

Subdiaphragmatic Pain. — Prof. F. A. Hoffman (*Münch. Med. Woch.*, Feb. 11, p. 265).—Subdiaphragmatic tenderness is of comparatively little localising value, since it is generally impossible to avoid simultaneous pressure on several organs. At certain points, however, such as immediately below the ensiform cartilage, near or over the vertebræ, gall-bladder, or kidneys, and at McBurney's point, tenderness is important. With these exceptions pain is of more practical value than tenderness. Radiating pain is most often of hepatic, least often of splenic origin; intermediate in frequency is pain radiating from the stomach and pancreas. As a general rule diseases which affect the mucous membranes alone or the parenchyma of hypophrenic organs are painless; those which affect the muscular layers of the hollow viscera give rise to colic. Those which involve the peritoneum alone produce localised pain, while those which affect the peritoneum *plus* the retro-peritoneal tissue give rise to radiating pains. Much may be learned from the direction of the radiation. In diseases of the liver, stomach, spleen, and pancreas the pain tends to be upwards; in diseases of the aorta, supra-

renal bodies, and solar ganglion downwards. This rule is constant anteriorly, but posteriorly the pain of hepatic, gastric, splenic, or pancreatic disease may exceptionally radiate downward towards the sacral and gluteal regions. More often, however, the rule of upward radiation holds good also posteriorly; thus in hepatic disease the pain usually radiates towards the right scapula and shoulder, in gastric affections to the vertebral column and the interscapular space, in disease of the pancreas to the left scapula, and in splenic disease to the left scapula and shoulder. Possibly disease limited to the left lobe of the liver may also give rise to the pain which usually characterises splenic disease. Hypophrenic abscesses give rise to pain radiating to the shoulders, if connected with the liver, stomach or spleen, but not if connected with the kidneys or intestines. Thus an abscess between the liver and diaphragm may be accompanied by pain in the shoulder if it is due to hepatic disease, but not if due to disease of the appendix. If again the abscess is deeply seated in the substance of the liver and nowhere approaches the capsule there will be no radiating pain. The same applies to carcinomatous nodules or echinococcus cysts. Subdiaphragmatic abscesses, therefore, *per se* give rise only to local, not radiating pain. Even when guided by these rules it is often difficult to interpret some forms of abdominal pain. The writer believes that abdominal pain may occasionally depend on a neurosis of the solar plexus, which contains sensory, motor, and vaso-motor fibres. The symptoms of this neurosis are both renal and intestinal. The pain, which is seated in the upper part of the abdomen, radiates downwards, but seldom reaches the genitals or lower limbs; it is accompanied by constipation, the passage of scybala, and polyuria. The following are examples:—

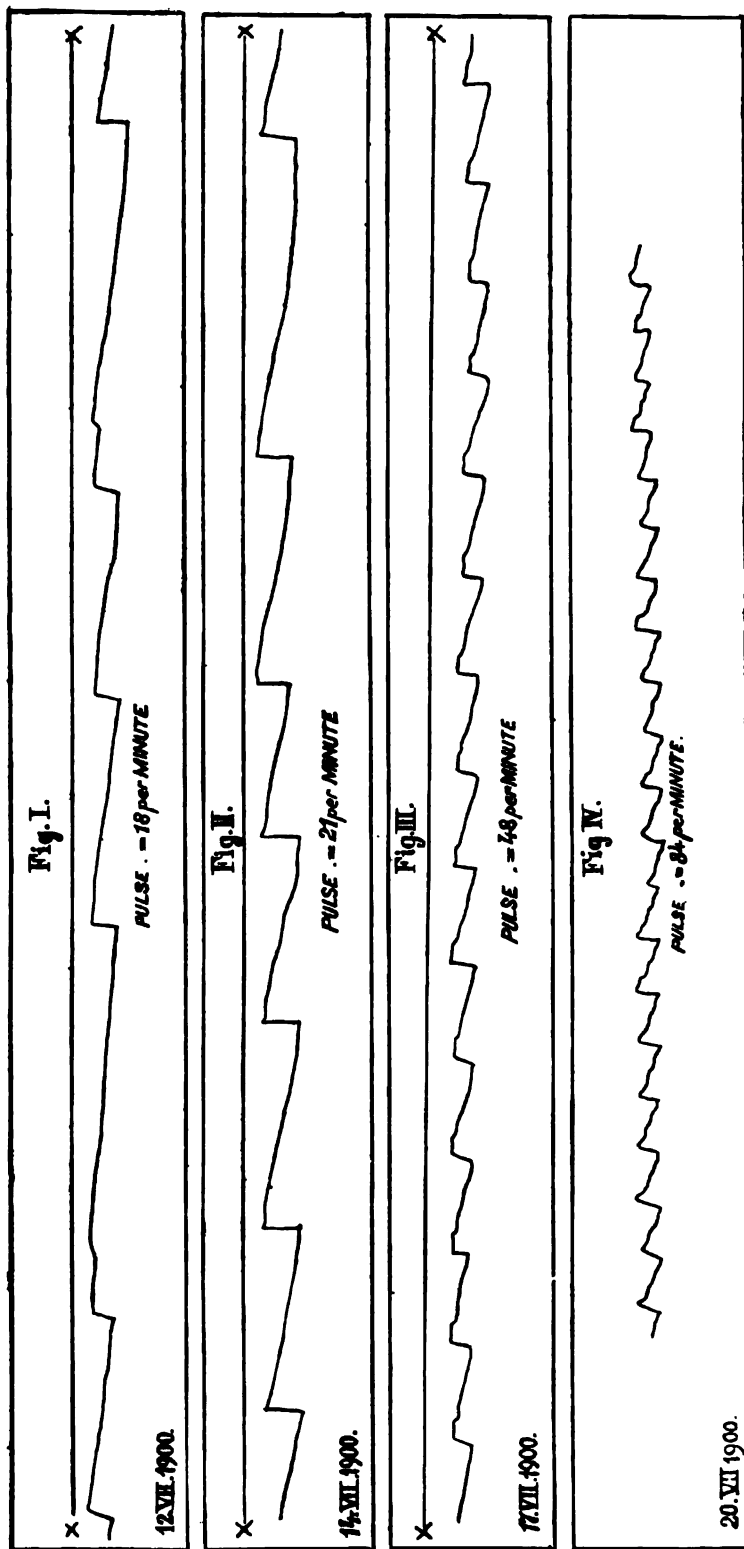
A man, aged 71, had had frequent attacks of severe abdominal pain for several months. These resembled tabetic crises, but no other symptoms of locomotor ataxy were present. There was obstinate constipation and the fæces

were scybalous. During the attack there was polyuria. The urine was of a s.g. of 1008 to 1012 and contained neither albumin nor sugar. Treatment for 8 months produced no improvement, and drugs only aggravated the pain.

A man, aged 45, had suffered from obstinate constipation for several months; the bowels had previously acted regularly. The upper part of the abdomen was extremely tender, and after rapid walking, prolonged standing or sitting, severe pains appeared, which radiated over the whole abdomen to the sacral and gluteal regions. There was polyuria (2500 c.c. in the 24 hours), especially at night, but no apparent polydipsia. The urine did not contain albumin or sugar.

Extreme Bradycardia.—E. Fuhrmann (*St. Peter-burg. Med. Woch.*, No. 30, 1901, p. 349).—A hard-working peasant woman, aged 40, was admitted to hospital on July 12, 1900, with œdema of the feet and attacks of vertigo. Syphilis and alcoholism were denied. She had never previously been ill, and had had 4 children. The legs swelled temporarily during and after the fourth pregnancy in 1895. On July 8, 1900, swelling of the ankles and feet in the evening was noticed, flickering lights appeared before the eyes, and she suffered from vertigo. On admission there was slight general anasarca, most marked in the legs. The liver was enlarged and tender. There was also slight splenic enlargement. The cardiac dulness extended to the lower border of the third rib above, the right border of the sternum on the right, and to the nipple line on the left. At the apex was a soft systolic murmur, which increased in intensity over the sternum. The second sound over the pulmonary area was slightly accentuated. The heart-beats corresponded to the pulse, which was 18 to 24 in the minute, and were not influenced by exercise. After prolonged standing the limbs became cyanosed. The pulse was fairly strong, of good tension, but occasionally irregular. The wave

SPHYGMOGRAMS OF THE LEFT RADIAL ARTERY.



Figs. 1, 2, and 3 correspond to a period of 20".

rose rapidly and sank slowly and regularly. On the descending curve were occasional secondary elevations (Fig. 1). There was considerable sclerosis of the temporal, brachial, and radial arteries. The respirations were 26. The lungs were normal. There were insomnia and anorexia. The urine contained no albumin, sugar, or casts; the s.g. was 1013, the daily quantity 1380 c.c. Rest in bed, a diet restricted to 52½ oz. of milk, and a mixture containing valerian and nux vomica, were followed by a rise in the pulse-rate. On July 14 it was 24 (Fig. 2). The daily quantity of urine was 2200 c.c. and the œdema of the legs had disappeared. On July 15 the right border of the heart had receded to the middle of the sternum. On July 16 the pulse-rate was 48, the cardiac dulness was normal, and the liver was smaller. On July 17 all internal organs appeared normal; the pulse-rate was 48 to 56 (Fig. 3). On July 20 the pulse-rate while sitting was 84 (Fig. 4), and the patient went home. On Aug. 4 the pulse was again irregular and varied in frequency between 54 and 80.

Bradycardia occurs (apart from the post-febrile variety) most commonly in conjunction with (1) arterio-sclerosis and atheroma, (2) fatty degeneration of the myocardium, (3) localised sclerosis of the coronary arteries, (4) fibrous myocarditis, (5) aortic stenosis, and, though most exceptionally, (6) mitral stenosis. It is not known why a degenerated heart should react with bradycardia in one case, and with tachycardia in another. In this case the woman had worked hard and carried heavy weights all her life. Whether the cause of the bradycardia was sclerosis of the coronary arteries or fatty degeneration of the myocardium could not be said.

Amœbic Enteritis (Dysentery).—Kernig and Ucke (*St. Petersburg. Med. Woch.*, No. 25, 1901, p. 299, and No. 26, p. 311).—The evidence in favour of certain forms of dysentery or enteritis being due to amœbæ is fairly conclusive. Since Lösch observed amœbæ in the intestine

of a dysenteric patient they have been found repeatedly. Robert Koch, in Egypt and India, found them post mortem in the bases of dysenteric ulcers. Kartulis, of Alexandria (Nothnagel's *Handbuch*, V., Part III., pp. 28 and 29), advances the following facts:—(1) Amœbæ are constantly present in typical endemic dysentery, with the possible exceptions of the little-studied forms found in Japan and Cochin China. (2) They are present in the walls and bases of dysenteric ulcers, but are absent in typhoid, tuberculous, and other forms of intestinal ulceration. (3) Dysenteric fæces which contain amœbæ often produce fatal dysentery when injected into the rectum of cats. (4) Attempts to produce dysentery in animals by the injection of cultures of the other organisms (bacteria) present in dysenteric stools have failed. Celli and Fiocca in Italy claim, however, to have succeeded with bacteria. (5) Dysentery has been produced in cats by the injection of pus from hepatic abscesses containing amœbæ in pure culture. (In tropical dysentery the pus of hepatic abscesses usually contains a variety of bacteria, with amœbæ. Kruse and Pasquale state that hepatic abscesses which are secondary to dysentery contain amœbæ, while those which are not contain none). (6) Though amœbæ are not infrequently present in the healthy human intestine, they differ from the *amœba dysenteria* (also called *amœba felis* because it is pathogenic in cats) in that they do not effect cats. According to Quincke and Roos there are 3 varieties of intestinal amœbæ: (1) *Amœba intestini vulgaris*, which is harmless both to man and cats; (2) *Amœba coli mitis*, which is pathogenic in man, but not in cats. (3) *Amœba coli*, of Lösch, *sive dysenteria*, *sive felis*, which is pathogenic both in man and animals. The existence of (2) is disputed by some. The amœba *felis* is also occasionally present in sporadic and epidemic dysentery. It contains vacuoles and measures 10 to 40 microns. Councilman and Lafleur have shown that amœbic dysentery

is characterised anatomically by localisation chiefly in the submucosa of the large intestine. The ulcers begin in the submucosa, which is also the chief seat of the amœbæ. These have not been cultivated outside the body. The writers report 7 cases of enteritis occurring in St. Petersburg in which amœbæ were present in large numbers. The crucial test of transferring the infection to cats was negative in the one case in which it was tried, but the fact that the diminution or disappearance of the protozoa under treatment coincided with improvement in the symptoms pointed to a causal connection. The symptoms in one case, which were those of acute infective gastro-enteric catarrh accompanied by pyrexia and splenic enlargement, probably corresponded to the earliest stage of amœbic enteritis. In the remainder they were those of acute dysentery—tenesmus, and frequent muco-hæmorrhagic stools. Ucke points out that in searching for amœbæ in fæces the mucous flocculi should be examined, and not the liquid portions of the stool. In some cases the mucous clumps consist almost entirely of amœbæ, and possibly represent zooglœæ, in which the mucous is the secretion of the amœbæ, rather than amœbæ embedded in intestinal mucus.

See also "Protozoa as a Cause of Diarrhœa," "REVIEW," Vol. III., p. 345.

Tuberculous Gastritis.—E. Przewoski (Virchow's *Archiv*, Bd. 167, Hft. 3) reports 5 cases of this rare lesion observed in the course of last year, and adds 1 of older date. The patients varied in age between 32 and 80. Tuberculous gastric ulcers are usually solitary, but in these cases 1 ulcer was present in 1 case, 2 ulcers were present in 3 cases, and 22 in 1 case; the smallest measured 1 square cm., the largest 10 square cm. The ulcers are usually situated at the pyloric end of the stomach, but may occur on the posterior wall, the greater or lesser curvatures, or the cardiac end. If many ulcers are present they tend to coalesce; thus, the mucous

membrane of the whole of the pyloric end of the stomach may be converted into 1 large ulcer. Multiple ulcers do not appear to develop from infection of the surface, and some of the small secondary ones surrounding a larger ulcer evidently arise from infection of the submucous tissue through the lymphatics. By coalescence with the primary sore an *ulcus tuberculosum serpens* is formed. In all the cases there were tuberculous changes in the intestines; though in 2 they were of the slightest.

Tuberculous ulcers of the stomach differ in some respects from those of the intestines. (1) Unless formed by the coalescence of several they are usually round, and not transversely oval as in the intestines. This is doubtless due to the course of the lymphatics and blood vessels being less regular. (2) The submucous cellular tissue is frequently involved in tuberculous gastritis to an extent never found in tuberculous enteritis. The changes consist of a diffuse tuberculous lymphangitis round the ulcer which may or may not produce rapid destruction of the tissue and undermining of the edges. (3) The muscular layers, the subserous tissue, and the peritoneum are less frequently involved in the stomach than in the intestine. (4) Tubercle bacilli are present in the edges and floor of gastric ulcers, but in relatively scanty numbers. Probably the cause of this and of the rarity of gastric tubercle in general is due to the fact that the gastric juice is inimical to the development of the bacillus. When gastric tuberculosis occurs some special predisposing causes must be at work. All the writer's patients suffered from fibroid phthisis. Possibly, therefore, chronicity and the consequent prolonged and constant contact of tuberculous material may be one factor. In 2 of the cases there was chronic gastritis with thickening and slate-coloured staining of the mucosa, in 2 well marked catarrhal gastritis, and in the fifth slight catarrhal changes were present. But if gastritis is a factor in the production of tuberculous ulcers it must be intense, as slight gastritis is common in phthisis. Another predisposing cause may be

the presence of a large number of lymphatic follicles in the mucosa. It is usually supposed that the gastric mucous membrane contains but few follicles. Dobrowolski, however, has shown that numerous follicles may be present, especially in catarrhal conditions of the stomach ("granular gastritis"). They are most numerous at the pyloric end, and least in the intermediate portion of the stomach. Lymphatic tissue is notoriously liable to tuberculosis, and tuberculous gastric ulcers are commonest where the follicles are most numerous. Lymphatic follicles were present in greater or less numbers in all the writer's cases. Deficient motor function and stagnation of the gastric contents, and the presence of simple ulcers and erosions, may favour tuberculous infection of the gastric mucosa. Finally, though gastric tuberculosis may occur with the slightest intestinal lesions, it is commonest when the latter are extensive, and especially if they have spread upwards from the ileum through the jejunum and involved the duodenum.

Tuberculous gastritis is seldom of clinical importance, as it is an incident in the course of usually advanced phthisis, and is often latent. Occasionally it may give rise to hæmatemesis or perforation. Before this stage is reached, however, it may produce marked gastric symptoms. In a case of Sokolowski's the cardialgia, constant dyspepsia, and absence of HCl. raised the suspicion of gastric cancer, and in 1 of the writer's cases in which 2 tuberculous gastric ulcers were found post mortem the same mistake was made.

Intestinal Calculi.—J. Kassai (*Ungar. Med. Presse*, Nov. 20, 1901, p. 662).—A woman, aged 36, entered hospital in Oct., 1900. She had had an attack of polyarthritis 3 years, and right purulent parametritis requiring incision after the birth of her only child, 2 years previously. For some years micturition had been painful. The family history was unimportant. Fourteen months before admission attacks of pain in the

left side of the abdomen appeared, and often persisted for days. During these there were distressing nausea and obstinate constipation, but no vomiting. The symptoms had lately increased, both in frequency and severity. There were anorexia and great emaciation. The thoracic organs were normal. There was a hernia through the cicatrix in the ileo-cæcal region. Towards the left of the hypogastrium was an elongated, nodular tumour, which was of cartilaginous hardness and extended from the level of the umbilicus into the pelvis. On external examination it appeared to be fixed and to have the characters of a retro-peritoneal tumour. Per vaginam its lower end could be felt through the posterior fornix, and on bimanual examination it was found slightly movable in a vertical direction. It was not connected with the genital organs, and was unaffected by inflation of the intestines. A malignant tumour of the intestine, possibly of the sigmoid flexure, which was adherent to the bony pelvis, was diagnosed. But after a dose of castor oil severe colic and tenesmus appeared, and a stone 1½ in. (4 cm.) long, 3½ in. (9.5 cm.) in circumference, and 270 gr. in weight was passed per anum. From that moment the abdominal pains ceased, appetite returned, and the general condition improved. But the facts that the tumour persisted and that the stone was faceted, pointed to the presence of others. A few days later, after an aperient, a second stone was passed. It was 1½ in. (2.8 cm.) long, 3 in. (9 cm.) in circumference, and weighed 169½ gr. Though this also was faceted at either end, and a tumour could be felt through the posterior vaginal fornix, aperients brought away no more stones. The patient gained weight and left the hospital. When seen again in Feb., 1901, the tumour was scarcely perceptible. In June, 1901, when she was re-admitted for a vesical calculus, she stated that a stone of the size of a hazel nut had been passed per anum a few weeks before. The tumour had completely disappeared. The stones chiefly consisted of phosphates of lime and magnesia, and contained but little organic

matter. They were concentrically striated, the colours varying in successive layers.

Intestinal calculi produce obscure symptoms, and their presence cannot be recognised with any certainty unless they are situated in the rectum. Most often progressive emaciation and neurasthenia coupled with intestinal symptoms and the presence of a hard tumour lead, as in this case, to a diagnosis of carcinoma.

See also "Intestinal Lithiariis," Vol. II., p. 745, and "Lesions produced by Oxyuris," "REVIEW," Vol. IV., p. 289.

Mediastinal Tumour: Mediastinal Abscesses.—L. Huismans (*Wien. Klin. Rundschau*, Sept. 15, 1901, p. 653).—CASE 1.—A man, aged 28, had rheumatic pains in several joints and constant cough. The pericardial dulness was increased and there was increasing dyspnoea. Twenty weeks later he entered hospital. The face was cyanosed, the eyes were prominent, and the eyelids oedematous. There was oedema of the whole anterior surface of the chest which felt like a soft cushion, and the superficial veins over it were enlarged and tortuous. The cardiac dulness extended on the left slightly beyond the nipple line, upwards to above the second rib, and on the right to the parasternal line. The apex beat was to the inner side of the nipple. The sounds were normal and there was no pericardial friction. Over the lungs were amphoric resonance and moist rhonchi. The liver extended from the seventh rib to midway between the ensiform process and the umbilicus. A tentative diagnosis of chronic emphysema with secondary dilatation of the right ventricle and hydro-pericardium was made. The steady extension of the dulness upwards and to the left combined with the oedema of the thoracic wall soon, however, clinched the diagnosis of a rapidly growing tumour. Left pleural effusion appeared and death occurred 3 weeks after admission.

NECROPSY.—There was a hard mediastinal tumour which had invaded the lungs on either

side, chiefly to the left, roofed in the apices, and by its growth between the pleura and pericardium depressed the heart. The "pericardial" dulness was chiefly due to this tumour, though there was considerable hydropericardium. The oedema of the anterior thoracic wall was due to the invasion of the manubrium sterni and the compression of both internal mammary veins. Both bronchi were compressed and the obstruction had produced emphysema. The left pleura was also invaded. The abdominal organs were normal. The tumour was a round-celled alveolar sarcoma, which had grown from the retro-bronchial lymphatic glands.

CASE 2.—A man (age not stated) had constant left pleurodynia after an attack of pleurisy. The pleura was thickened and at the apices were dry rhonchi and tympanitic resonance. There was no pyrexia. The pain slowly moved and became more and more localised over the spinous process of the third lumbar vertebra, where there was a sharp angular depression. Headache and pyrexia appeared and death followed with the symptoms of tuberculous meningitis.

NECROPSY.—There were tuberculous meningitis, left pleural adhesions, and tuberculosis of both apices. In the posterior mediastinum was a tuberculous abscess enclosed in a tough fibrous capsule. It extended from the arch of the aorta through the hiatus aorticus of the diaphragm to the third lumbar vertebra. The anterior surfaces of the bodies of the vertebræ, along the whole length of the abscess, were covered with numerous depressions which resembled the imprint of finger tips in a soft substance, and were due to multiple caries. Apical catarrh was probably followed by left pleurisy and caseation of the retro-bronchial glands. These gave rise to the abscess which in its downward course produced multiple foci of caries in the vertebræ. The initial pleurodynia was due to contracting pleural adhesions, the pain over the third lumbar vertebra to caries. The dissemination of the caries negated the possibility of primary spinal disease.

CASE 3.—A man had pneumonia which was followed by increasing dyspnoea. On admission to hospital there were cyanosis, remittent pyrexia, and foetid expectoration. The superficial cervical veins were distended, the tension diminishing neither with inspiration nor the cardiac diastole. The sterno-clavicular insertion of the right sternomastoid was prominent, and above the manubrium sterni was a triangular patch of dulness, such as frequently occurs in aortic aneurysm, and which on the right extended across the supraclavicular fossa. There were amphoric resonance at the right apex in front, and harsh breathing and moist crepitations behind. The heart and other organs were normal. A mediastinal abscess secondary to suppurating bronchial glands and compressing the lung at the right apex was diagnosed. Under an anæsthetic the insertion of the right sternomastoid was incised, and the internal jugular vein was ligatured and divided. Deep in the cervical connective tissue to the inner side of the scalenus anticus was a yellow discoloured spot. This was incised and a large quantity of foetid pus was evacuated. Immediately the cervical veins collapsed, the cyanosis subsided, and respiration became easier. The abscess cavity, which involved both anterior and posterior mediastina was plugged and drained. There was a temporary improvement, but 3 days after the operation there was renewed pyrexia. A piece of the second rib and a portion of the manubrium sterni were, therefore, resected and a large drainage tube was introduced. The fever continued and death occurred 2 days later.

NECROPSY.—There was a gangrenous patch at the right apex and a large abscess which completely filled the mediastinum. Probably, there was first a central patch of

pneumonia which was followed by gangrene, and gave rise to tympanitic resonance in front and dulness posteriorly. Then the retrobronchial glands became infected by the lymphatics, and gave rise to the mediastinal abscess. Lenhartz has recently published 2 cases of purulent mediastinitis, probably consecutive to pneumonia. In both recovery followed resection of a rib and evacuation of the pus.

Dextrocardia.—M. J. Garel (*Bull. de Soc. des Hôp. de Lyons*, p. 85, 1902).—A woman, aged 27, complained of slight cough and dyspnoea on effort. Examination of the lungs showed that the left apex was dull. The base of the right lung expanded slowly and much less than the left, and there was distinct bronchial breathing. The cough was metallic and the expectoration mucous. Radioscopy showed no cardiac shadow on the left side; the heart was present on the right side and was placed in an axis symmetrical to that in which it is usually found. (Fig.). There were some small shadows suggesting pleural adhesions



at the base of the right lung. This case was probably of congenital origin although pulmonary conditions suggestive of tuberculosis were present. The axis of the heart in its abnormal position was however almost confirmatory of such a cause.

M. Chatin (*Bull. de Soc. des Hôp. de Lyon*, 1902, p. 89) describes the case of a man, aged 35, and M. A. Pie that of a man, aged 65. M. Rit (*Thèse de Lyon*, 1902) and others emphasize the necessity of determining the exact axis of the heart in its abnormal position. In congenital cases the usual vertical axis is inverted, and other cardiac malformations are frequent. In acquired cases any alteration in the axis reflects the direction and extent of the traction and its recognition is helpful in prognosis. It is significant that in all these cases the patients were tuberculous.

Arrest of Tachycardia by Deep Inspirations. — Herbert D. Everington, M.B. (*Lancet*, May 10, p. 1317).—A married woman, aged 36, was admitted to hospital on Aug. 3 suffering from articular pains and swellings which she had had for some days. She looked decidedly ill. The face was puffy and congested, the tongue was dry and furred down the centre, and the pulse was 128, of full volume, high tension, and "bounding." The temperature was 103°. The left knee and wrist were acutely tender and much swollen. Bicarbonate and salicylate of soda were given. On the night of the 9th the pulse became so rapid that it could not be counted at the wrist. With the stethoscope the beats could be distinguished and were found to number 224 per minute. The patient complained of pain in the limbs. The salicylic acid was discontinued and 5 minims of tinct. digitalis with 30 minims of sal volatile were given every 4 hours. In the morning the pulse was 210. Ten minims of tinct. digitalis, 5 minims of tinct. nuc. vom., half a drachm of spt. ammon. arom., 10 minims of spt. chloro-

form, and distilled water to an ounce were given every 4 hours. On the afternoon of the 10th the patient was examined by Dr. Guthrie Rankin who found there was no evidence of organic disease of the heart and no dilatation. The heart beats were about 220 per minute. Dr. Rankin ordered the patient to take deep breaths and after several the heart beats dropped to 124. A mixture of 15 gr. each of bromide and salicylate of sodium was given every 4 hours, alternately with the digitalis mixture. For several days the pulse was not unduly rapid, but the temperature averaged 100°. The bromide was discontinued on the 18th. The patient gradually became worse; the tongue became extremely dry and foul and sordes developed on the teeth and lips. On the 22nd she presented a decidedly "typhoid" appearance. Soon after midnight on the 25th the pulse had again risen—to 192. On taking some deep breaths it immediately fell to 108. On the night of Sept. 2nd tachycardia was again present—202—but the rapidity could not be reduced by deep inspirations as heretofore, nor did they have such an effect subsequently. On the 5th, at 2.25 a.m., when the temperature was 103°, the highest rate of pulse was noted—254. Improvement began and by the 24th she was out of immediate danger. The knee and wrist improved but never returned to normal. The general health became much better.

Diagnosis of the articular trouble is very difficult. The case illustrates the fact that alteration of intrathoracic pressure may influence tachycardia. The mere mechanical taking of deep inspirations was sufficient to reduce the frequency of the heart by nearly 100. Sir William Broadbent in his "*Heart Disease*" states that "to arrest an attack of palpitation it is sometimes only necessary to take a dozen deliberate breaths." In the *Twentieth Century Practice of Medicine*, vol. iv., p. 413, Rosenfeld is quoted as describing how a patient made the accidental discovery that after a deep breath the palpitation ceased. Rosen-

feld tried increased intra-thoracic pressure as treatment for this condition and with much success. Prof. Clifford Allbutt in his "*System*" quotes a case in which, by holding the breath in inspiration and bending down and thereby pressing the abdomen on the thighs, attacks of palpitation were arrested.

Nasal Vertigo and Epilepsy.—Dr. A. Jousset of Lille (*Rev. Hebdom. de Laryngol., d'Otol. et de Rhinol.*, March 15, p. 305).

CASE 1.—A man, aged 26, complained of difficulty in breathing, a feeling of itching in the left nostril and of weight in the head, and of formication in the limbs. After a little jerking he lost consciousness, and the face, at first congested, became very pale. There was great weakness after the attack.

This epileptiform attack seemed to the writer to be due to peripheral excitation in the left pituitary membrane. Rhinoscopic examination showed marked deviation of the septum to the left which was due to a fall at the age of 12. The breathing through the right nostril was also very defective in consequence of a hypertrophied inferior turbinate. Operation was performed, and 10 days afterwards he breathed freely on both sides. The epileptiform attacks did not recur.

CASE 2.—A man, aged 30, had been subject to epileptic attacks which had diminished under bromide, but lately had become more frequent and severe. This relapse appeared to be due to pains in the nose, which were followed by a troublesome nasal discharge. A feeling of pricking in the nose, and of weight in the head, preceded the attacks. Hypertrophic rhinitis was found on the left side, atrophic on the right. The galvano-cautery was applied to the turbinals, and the fits ceased. The aura was therefore nasal, and the destruction of a portion of the turbinals removed a source of irritation.

CASE 3.—A priest, aged 24, had in the right nares a spine which had formed adhesions with the inferior turbinal. He became embarrassed

when he read a long time in a loud voice, and was obliged to stop owing to headache and cardiac distress. The apnoea produced a sensation of malaise, tendency to weakness, and staggering. Operation resulted in complete cure.

CASE 4.—A lady, aged 29, had for a long time trouble in breathing. The septum was much deviated to the right. There were frequent headaches, and it was impossible to fix the attention and perform intellectual work. Operation was followed by disappearance of the troubles.

CASE 5.—A child, aged 7, had adenoids and an enlarged left inferior turbinal. He was subject to attacks of suffocation and of asthma. Curetting the naso-pharynx and cauterisation with chromic acid of some points on the inferior turbinal diminished these attacks.

Epistaxis in New-born Children.—M. L. D'Astros (*Archives de Médecine des Enfants*, April, p. 193).—Epistaxis is a frequent symptom in childhood, and may appear under a variety of circumstances such as in measles, typhoid fever, pneumonia, whooping cough, and diphtheria. It may be a manifestation of purpura and hæmophilia. It may also be due to some simple local condition such as traumatism of the nasal mucous membrane, congestion, varicosity, polypi, etc. But though during childhood epistaxis occurs under the least provocation, it is not so in the new-born infant. Under the age of 6 months epistaxis is rare. The amount of blood lost is generally slight, there may be no more than a few drops; very rarely is epistaxis so severe as to endanger life. The bleeding may take place into the pharynx and escape detection. On the other hand blood from the buccal mucosa, especially in debilitated children, has been known to pass back into the throat and come out through the nose. Epistaxis in the infant is due to a variety of causes. In certain cases of omphalorrhagia, gastrorrhagia, or entorrhagia of the first 3 days after birth there is venous

engorgement and stasis from debility and defective energy of the newly-established circulation, and epistaxis occurs. Hæmorrhages may be due to some general or infective cause and may take place from the umbilicus, stomach, lung, skin or nasal mucous membrane. Epistaxis under such circumstances is therefore a serious manifestation. Epistaxis may be secondary to some nasal infection or to coryza, especially to syphilitic coryza. Usually the discharge is sero-sanguinolent. The writer records instances of epistaxis of this nature in which there was also bleeding from the ear. In another group of cases epistaxis is secondary to a general grave infective condition without previous nasal disturbances. Thus a child born at the seventh month had syphilitic pemphigus of the feet and hands. On the 24th day there was abundant epistaxis which ended fatally. In some cases there are other syphilitic manifestations, such as umbilical ulceration, hepatic changes, etc., and the epistaxis appears as a final symptom.

Epistaxis may appear in other toxic conditions, either of gastro-intestinal or renal origin. In the following case the hepatic and renal sclerosis seems to have been due to some infection originating in the alimentary tract:—An ill-developed child of one month was put out to nurse. There was slight constipation. About the 7th week after birth there was œdema of the abdominal wall and lower limbs with sub-icteric tint of the skin; vomiting became troublesome. There was no albuminuria, but the urine contained abundance of bile pigment. A few days later the liver was found enlarged. The following day there was epistaxis. Blood appeared in the stools and petechiæ on the skin. The child died on the 65th day. On post-mortem examination the liver was found enlarged, yellow and hard; the kidneys were also much tougher than normal.

Finally, epistaxis may be a symptom of some

infective disease such as septicæmia, osteomyelitis, etc. Possibly in such cases infection takes place by way of the nasal mucosa. Thus epistaxis in the new-born child seems always to indicate some grave constitutional condition, usually hereditary syphilis, sometimes a septic infection local or general. It should always be regarded as an important symptom, the cause of which must be carefully sought.

The Identity of Human and Bovine Tuberculosis.—S. Arloing (*La Presse Méd.*, Feb. 12th, p. 147).—Villemin writing in 1865 showed the possibility of inoculating rabbits with tuberculous matter obtained from men or cows. This was held by many to be due to the method of inoculation. To combat this theory Chauveau in 1868 made experiments on cattle by placing tuberculous matter from the lungs of affected cows in the food. All the animals became infected. Next he fed calves with food mixed with tuberculous human lung. All became rapidly and gravely affected. These experiments showed the identity of human with bovine tubercle.

In 1882 Koch discovered the specific bacillus. Tschernig, Pfeiffer, and Hartzell published cases of local infection during the necropsy on a tuberculous animal. Many cases of infection by milk are recorded. The most remarkable is the case of a daughter of Professor Gosse, of Geneva. There was no tuberculous heredity. The girl developed intestinal tuberculosis, and it was found that the cow from which she obtained milk was tuberculous. Many observations show that the introduction of a tuberculous cow into a cowshed causes a spread of the disease to the other cows, and, conversely, that long confinement in a shed occupied by tuberculous cows may produce the disease in man.

To prevent the spread of tubercle from animals to man in France all tuberculous meat is seized in the following cases: (1) When the tuberculous lesions are accompanied by wasting.

(2) When tuberculous masses are found in the muscles, or the intramuscular glands. (3) When the tuberculosis is miliary. (4) When there are important tuberculous lesions both in the abdomen and thorax. Meat is seized and only partially destroyed: (1) When the tubercle is localised either in the chest or thorax. (2) When the lesions although they exist both in thorax and abdomen are limited. In these latter cases only the parts directly in contact with the affected area are confiscated. Numerous observers have found tubercle bacilli in milk. They are present in more than half the cases in which the mammary organs present tuberculous lesions, and sometimes in tuberculous animals in which no such lesions exist. The bacillus is also frequently found in butter. It is however necessary to remember that as Koch, Pétri, and Rabinowitsch have demonstrated both butter and milk frequently contain the bacilli known as acidophiles which have the same affinities for stains as Koch's bacillus without pathogenic properties.

There are however bacteriological and pathogenic differences between the bacillus of human, and that of bovine origin. Villemin observed that tuberculous matter from the ox appeared more virulent than that from man. Smith in 1896 and Dinwiddie in 1899 published an account of their work in America, and Frothingham, Baumgarten and Gaiser also drew attention to these differences. In cultures the bacilli of bovine origin are shorter, thicker, more oval, less granular than the bacilli of human origin. Inoculated into cattle the former are much more active. Smith inoculated 11 animals: 5 with bovine bacilli, 6 with human bacilli. Of the former 2 died from miliary tuberculosis, one presented typical granulations, 2 only some lesions. In the second set, only insignificant local lesions were produced.

Frothingham inoculated 7 calves, some in the peritoneum or trachea, others under the skin. These animals showed tuberculous lesions at the point of injection or in adjacent glands. None acquired general tuberculosis. Baumgarten and Gaiser inoculated a calf in the eye, and under

the skin with bacilli of human origin, and another with those of bovine origin. The latter acquired general tuberculosis and died, the former did not show any tuberculous lesion. These writers did not regard human and bovine tuberculosis as distinct entities, but as two varieties of the same disease. Further the morphological, biological, and pathogenic properties vary in each of these varieties. S. Arloing demonstrated in 1884 that the glandular lesions known as scrofulous, and the greater part of the surgical tuberculous affections were less virulent than a considerable number of the varieties affecting viscera and serous membranes. Bacilli from the latter, injected under the skin, infected the rabbit and the guinea-pig; those from the former only the guinea-pig. He further demonstrated that organisms from some tuberculous lesions which affected only the guinea-pig after being inoculated several times became capable of affecting the rabbit also. S. Arloing and J. Courmont in 1893 observed various degrees of virulence in lupus. Koch suggested that differences in the virulence of the infection depended on the number of bacilli present. Arloing, however, by a series of experiments has shown that by growth on different media or injection into a more resistant subject the virus may be attenuated.

See also "REVIEW," pp. 45 and 321.

Purulent Peritonitis associated with Empyema.—Henry Ashby, M.D., F.R.C.P. (*Lancet*, April 19, p. 1096).—Inflammations of serous membranes are by no means always single; there may be double pleurisy, or pleuro-pericarditis, peritonitis, or meningitis associated with pleurisy or pleuro-pneumonia. The double or treble lesion is due to infection by microbes carried from one organ to another by the bloodstream, or in some cases (as from the left pleura to the pericardium) infection has occurred by contact. These associated inflammations have a certain analogy to multiple arthritis, hence the name "polyserositis" or "polyorromenitis."

("REVIEW," Vol. IV., p. 23). In the following case there were simultaneous purulent peritonitis and pleurisy.

A delicate girl, aged 8½, had suffered a good deal from bronchitis. On Sept. 10, 1901, she was suddenly seized with vomiting, diarrhoea, and abdominal pain. Next day the temperature was 103°, the vomiting was incessant, the stools were foul and liquid, and there were cough and mucous expectoration. The vomiting ceased in a few days but the diarrhoea continued for a week and the temperature remained at from 103° to 104°, while great pain was complained of in the abdomen and left chest. There was also jaundice for a few days.

On Sept. 21, when she was first seen by the writer, she had severe abdominal pain in paroxysms. There were marked tympanites, great tenderness all over the abdomen, and signs of consolidation in the lower two-thirds of the left lung posteriorly with bronchial breathing and consonant râles. There was also a patch of pneumonia at the extreme base on the right side. The respirations were rapid, the temperature was 101°, and the pulse was 140. Pneumococcic peritonitis with double pneumonia was diagnosed. The general condition was remarkably good considering the extent of the inflammation. She was bright and cheerful when not in pain; the vomiting had ceased, the features were not drawn, nor were there any signs of collapse. On the twenty-third day the abdomen contained much fluid; the flanks were bulging and a well-marked fluid thrill could be obtained from side to side. The superficial veins were distended and there was a zone of redness around the umbilicus. The left pleura was full of fluid, and the heart was pushed to the right. The patch of pneumonia on the right side had disappeared.

Next day 40 ounces of pus were removed from

the abdomen by inserting a tube at the umbilicus, but before the operation could be performed the pus had penetrated the skin at this spot. At the same time a rib was excised and the empyema was drained. In the next few days much pus drained away from the tube in the abdomen, but it ceased to flow before the end of the week and the tube was removed. The draining of the empyema was more tedious, but good recovery eventually resulted.

Otorrhagia in Typhoid Fever. — Drs. Raoult and Specker (*Rev. Hebdom. de Laryng., d'Otol. et de Rhinol.*, Feb. 1, p. 129).—A child, aged 10, suffering from typhoid fever had one day 2 attacks of intestinal hæmorrhage. Next day there was epistaxis and at the same time blood flowed from the right ear. Boric douches were used and the meatus was plugged with cotton-wool, but the hæmorrhage continued for 3 days, when blood gave place to pus. Three days later a small perforation was observed in the anterior-inferior quadrant from which pus was flowing. Sublimate douches were used and the discharge ceased in a fortnight. There were two attacks of intestinal hæmorrhage during convalescence.

Otorrhagia during typhoid fever is extremely rare: the writers could find only 3 recorded cases. Typhoid fever predisposes to hæmorrhages and particularly to epistaxis. Perhaps the effused blood distends the membrane and leads to perforation, or perhaps suppuration leads to perforation of the membrane and allows the blood to escape. The writers do not think the condition was one of nasal hæmorrhage passing along the Eustachian tube, for although the otorrhagia occurred simultaneously with the epistaxis it also occurred after the nasal hæmorrhage ceased. The blood probably came from the inflamed mucous membrane of the middle ear.

THERAPEUTICS.

Morphia Poisoning Treated by Infusion of Salt Solution.—E. F. Willoughby, M.D., (*Lancet*, May 10, p. 1316) was called at 1 P.M. to a woman who less than half an hour before had taken 8 gr. of sulphate of morphia in 3 hypodermic injections. She was still semi-conscious, but within 10 minutes she became comatose, and it was impossible to rouse her. During the first hour injections of $\frac{1}{8}$ gr. of sulphate of atropine and $\frac{1}{10}$ gr. of nitrate of strychnine were given with the only perceptible effect of exciting spasms from every 10 to 20 minutes. The rigidity of the muscles, which lasted from 3 to 5 minutes at a time, greatly interfered with artificial respiration, which soon became necessary and had to be continued for 4 hours. Though natural respiration was then re-established and the spasms had passed off the pupils were contracted to pin-points, the complexion was dusky, and the narcosis was so profound that the application of the strongest interrupted current to the soles did not excite the slightest movement even of the toes. No urine had been passed; about an ounce was drawn off with the catheter. The writer then suggested subcutaneous injection of normal saline solution as recommended by Sahli of Berne. An hour was lost in getting the apparatus. When about a litre had been infused by gravitation into the subcutaneous tissue of the flank the effect was striking. Within 20 minutes the duskiness and coldness of the skin gave place to a natural colour and warmth, and the patient so far recovered consciousness as to resist violently the mechanical and electrical stimulation employed to keep her awake. The improvement following infusion of the salt solution was due to the impulse given by the increased intra-vascular tension to the gastric and intestinal exudation and consequently to the elimination of the

morphia, which is excreted mainly in the bowel and little, if at all, by the kidneys. The writer would have given potassium permanganate, which decomposes morphia even in the presence of oxidisable matter, had the poison been swallowed. But as the drug was now passing out into the alimentary canal it could be destroyed as fast as it appeared by contact with the permanganate and reabsorption might be prevented. A wineglassful of a dilute solution of potassium permanganate was therefore given alternately with nourishment every quarter of an hour during the night until the contraction of the pupils had passed off. Next day the patient's condition was quite normal.

Treatment of Dysentery by Hypodermic Injections of Saline Solution.—Ljubomudrow (*Wojenno-Medizinski Shurnal*, March-June, 1901: abstracted in *St. Petersburg. Med. Woch.*, No. 49, 1901, p. 65) has treated 200 cases of dysentery during the past 3 years in the Military Hospital in Moscow. In severe cases hypodermic injections of a warm 0.9 per cent. solution of sodium chloride were administered. From 14 to 17½ oz. were injected into the subcutaneous tissue of the abdominal wall or the subclavicular region. The injections were not very painful, and no complications were observed. As a rule only 1 injection was necessary, though occasionally a second was given some days after the first. The fluid was absorbed in 3 or 4 hours. In the 2 of the 7 cases in which death occurred the injections were not given until the patients were moribund. In the remainder great improvement followed the treatment, which tided them over the most dangerous period of the illness. In severe cases of dysentery salt injections give the best prospect of recovery.

Exclusively Rectal Feeding and Gastric Irrigation in the Treatment of Appendicitis.—Prof. Ochsner, of Chicago, (*Munch. Med. Woch.*, Feb. 25, p. 305) claims that many of the complications of appendicitis may be avoided by withholding all food by the mouth, and, if there is nausea or vomiting, by irrigating the stomach. These complications include diffuse and circumscribed peritonitis, infection of the Fallopian tubes, ovaries, and gall-bladder, hepatic abscess, empyema, infection of other serous surfaces, metastatic abscesses, peritoneal adhesions, and ileus, which may occur whether the cases are treated surgically or expectantly. After operations which require drainage ventral herniæ are common and intestinal fistulæ not rare. If the case is diagnosed within 36 or perhaps 48 hours of the onset the appendix should be removed immediately; the inflammation is limited to the appendix and with its removal all possible complications are obviated. For the same reasons the appendix should always, if possible, be removed in the intervals between the attacks. The majority of cases, however, are seen too late for early operation and too soon for operation in an interval. In these the inflammation may be prevented from spreading and be strictly localised, even if gangrene or perforation has occurred, by exclusively rectal feeding, nothing being given by the mouth except small quantities of hot water. Normally the inflamed appendix is isolated from the general peritoneal cavity by the omentum and coils of small intestine, the contents of the ileum are prevented from entering the cæcum by closure of the ileo-cæcal valve, and as a further protection the abdominal muscles contract rigidly over the appendix. If no food be given these favourable conditions persist as long as is necessary. The omentum is so well supplied with blood and lymphatics that there is no danger of general peritonitis as long as the intestines are quiescent. As soon, however, as food is given by the mouth peristalsis begins. This may not only break down the

natural barriers, but may cause infective material to be transported, so that localised peritonitis suddenly becomes diffuse. The proof of the efficacy of the treatment is that in the most severe cases the condition improves to such an extent that operation may be postponed until the acute symptoms are past, although a perforation or gangrene of the appendix may afterwards be found.

For 3½ years the writer has employed this method in every case in which the process had spread beyond the appendix, and has operated in 620 cases. In 21 the patients had diffuse peritonitis on admission to hospital; of these 4 were already moribund and no operation was performed, and 17 were treated by rectal feeding and operated on later. Of the latter 8 died. In 192 cases there was perforative or gangrenous appendicitis with peritonitis, which was either circumscribed or just beginning to become generalised. They were all treated by rectal feeding until the most advantageous time for operation which was performed with 9 deaths, or a mortality of 5 per cent. In 407 cases the operation was performed in the interval, or within 36 hours of the onset of disease, with but 1 death, or a mortality of about ¼ per cent.

Treatment of the Digestive Organs in severe Anæmia.—F. Perutz (*Munch. Med. Woch.*, Jan. 21, p. 97).—Some of the cases formerly included under pernicious or essential anæmia depend on chronic inflammatory or atrophic conditions of the stomach and intestines, and can be benefited or cured by their treatment. The word "pernicious" should be reserved for cases in which no cause can be found.

A man, aged 53, was admitted to hospital in June, 1900. Since 1869 he had suffered from gastro-intestinal catarrh. From 1880 to 1890 he lived in a malarious district and suffered from trifacial neuralgia. The spleen was then enlarged but there was never pyrexia. On admission he

was pale and languid, and had attacks of cardiac failure and dyspnoea. The hæmoglobin was 50 per cent. and there was some poikilocytosis. The spleen and liver were not enlarged, the lungs and heart were normal, and the urine contained no albumin. There were anorexia, nausea, vomiting, and diarrhoea, alternating with constipation. The gastric contents, which were repeatedly examined, contained neither HCl nor pepsin, and atrophy of the gastric mucosa was therefore diagnosed. The fact that copious formed pultaceous stools were passed 3 or 4 times a day and contained undigested fragments of food pointed to concomitant intestinal disease. It was therefore *a priori* probable that the anæmia was of gastro-intestinal origin. The stomach was irrigated every morning while empty with saline solution, the large intestine every evening with camomile enemata. The general condition improved and the hæmoglobin rose in 4 weeks to 65 per cent. He then left the clinic, but continued the use of the enemata daily and the gastric irrigations occasionally. About Christmas he suddenly became worse, and was not benefited by arsenic. Pernicious anæmia was diagnosed and a bad prognosis given. On April 28, 1901, he re-entered the writer's clinic. The skin was greyish-yellow, and the dyspnoea and asthenia were intense. There were nausea, vomiting, and complete anorexia. The hæmoglobin had fallen to 20 per cent. and there was extreme poikilocytosis. Bronchitis and anasarca, which were due to the weak dilated heart and the hydræmia, were present. The liver was enlarged; the spleen was normal. The urine contained albumin, urobilin, and a quantity of indican. There were loud anæmic murmurs over the heart and considerable emaciation. The treatment by irrigations was resumed, but was again temporarily suspended as syncope resulted. The œdema increased and involved the skin of the back, abdomen, hands, and face. Dulness appeared posteriorly at the right base, and the dyspnoea became more marked. The temperature was 101.3°. Wine, meat juice, and tea were given as

stimulants, and as much nourishment as possible was taken. Appetite slowly returned, vomiting ceased, and the irrigations were resumed. The hydrothorax, œdema, and albuminuria disappeared, and 3 weeks after admission the previously bed-ridden patient could walk slowly without dyspnoea, though there was still a systolic cardiac murmur with some dilatation. The hæmoglobin had risen to 50 per cent. He was discharged on July 14. When next seen on Nov. 6 the appetite was always excellent, and there was no vomiting. He had neither dyspnoea nor palpitation, and took long rides and walks without inconvenience. Though the ankles occasionally became œdematous towards evening, the skin was still greyish, and the mucous membranes were somewhat pale. The cardiac murmur had disappeared. The urine was free from albumin and urobilin, and contained only a trace of indican. The temperature was normal. The stomach contents contained 2.87 HCl per mille. The hæmoglobin was 80 per cent., the erythrocytes were 3,900,000, and there was no poikilocytosis. Since his discharge he had irrigated the intestines daily, and the stomach occasionally.

With the exception of the irrigations, an alkaline mineral water (*Obersalsbrunner Oberbrunner*) and small doses of dilute hydrochloric acid, which were given for a time, the treatment was entirely dietetic. As long as there was absolute anorexia, a mixture of oatmeal and egg was introduced through the stomach tube. For some time the diet consisted of milk, oatmeal, and mucilaginous soups. Later farinaceous puddings with cream and butter were allowed. When at last appetite for meat returned it was given in large quantities. Small quantities of piquant delicacies, such as pickled herrings and anchovies, or Liebig's extract, were given as appetisers, before meals. Towards the end of the final stay in hospital a tonic consisting of ferratin with arsenic and quinine, was given. The prognosis as regards relapse is uncertain.

The Beneficial Action of Alcohol on Tuberculosis.—St. Mircoli (*Münch. Med. Woch.*, March 4, p. 353), of Prof. Maragliano's clinic at Genoa.—Maragliano's tuberculin is prepared by boiling tubercle bacilli in pure water until all the toxic substances which are not destroyed by heat (proteins) are extracted, and unlike Koch's tuberculin contains no glycerine. One c.c. kills one hectogramme of body weight in animals in 24 to 36 hours. The blood serum of healthy subjects has a certain antitoxic power, and when mixed in certain proportions with the minimum fatal dose of Maragliano's tuberculin in a test tube, neutralises it. On an average 2 to 3 gm. of healthy blood serum protect 1 kilogram. of an animal against the minimum fatal dose of tuberculin. The serum of those, however, who are convalescent from acute, or are suffering with chronic diseases has less antitoxic power, so that 4 or even 6 gm. may fail to neutralise the minimum fatal dose. The serum of tuberculous subjects, especially when the disease is progressing, has the least antitoxic power of all. It is generally assumed that alcoholic subjects attacked by tuberculosis have little power of resistance. The writer found that in the early stages of alcoholism the contrary was the case. Unless organic disease has been produced the serum of those who partake freely of alcohol has an abnormally high antitoxic power. In advanced cases of alcoholism in which organic lesions, such as neuritis, are present the antitoxic power of the blood serum usually falls considerably below normal. In a case of alcoholic hepatic cirrhosis, however, the ascitic fluid possessed great antitoxic power. It is of interest that the injection of Maragliano's tuberculin (1 c.c. every day for 8 days) raises the antitoxic power of the blood serum more rapidly in those who partake freely of alcohol than in abstainers. Probably the action of tuberculin and alcohol are identical; both, though the former is more active and rapid, assist the organism to neutralise the toxins of tubercle. Possibly also alcohol

promotes healing by its tendency to produce fibrosis.

The writer then approached the subject from the standpoint of statistics, and found that the dock labourers, who at least drink on an average 5 pints of wine besides other alcoholic beverages daily, were not subject to tuberculosis more than other workmen who drank less, although, as proved by the frequency of pneumonia among them, they are unusually exposed to chill and constantly respire air charged with coal, corn, or coffee dust. The statistics of Maragliano's clinic also support this view.

Though the free use of alcohol is beneficial in phthisis excessive drinking is detcrious, as is proved by the low antitoxic power of the serum of those with organic disease of alcoholic origin. The boundary between free use and excess varies with the individual, the conditions of life, the amount of exercise, the climate, and the quality as well as the quantity of the alcoholic beverage. Maragliano recommends brandy, and gives it in milk.

Treatment of Hæmophilia with Calcium Chloride.—C. Edward Wallis, M.R.C.S., L.D.S. (*Brit. Med. Jour.*, May 10, p. 1141).—A woman, aged 25, came to hospital for advice about her teeth. Two months previously a tooth was removed and hæmorrhage continued for 36 hours. It was arrested by plugging, though even this was not for some time successful. She was advised that in future she must warn any dentist of her tendency to bleed. She gave a history of hæmophilia, which seemed to manifest itself on the slightest provocation. Her appearance was that of a chronic dyspeptic. Her teeth were almost without exception carious and foul, and there were many abscesses. Before clearance of her mouth a course of calcium chloride was prescribed to increase the coagulability of the blood. She was ordered a mixture containing 10 gr. of the salt thrice daily for a week. Then,

so as to be on the safe side, the writer extracted only one tooth, and that an incisor, so that the socket could be easily plugged. The hæmorrhage was slightly more than ordinary, but not serious.

The calcium chloride was continued, and after another week 3 teeth were extracted without excessive hæmorrhage. She then took the medicine for a fortnight, but neglected to take it in the following week. Hoping, however, that her previous dosing would at least have some effect, the writer extracted one tooth. The hæmorrhage was greater than previously, though not such as to require heroic measures. The dose of calcium chloride was increased to 15 gr. The remaining stumps were extracted, as many as 3 or 4 at a sitting, without abnormal hæmorrhage. In another case a typical hæmophilic was treated in the same way, with similar result.

The Thermo-Cautery in Hæmophilia.—W. E. Kinnler, M.R.C.S. (*Brit. Med. Jour.*, March 8, p. 587).—The following case illustrates the failure of suprarenal extract as a hæmostatic. A boy, aged 10, with a family history of hæmophilia fell on Dec. 7 and bit his tongue. Much blood was lost, and every styptic was tried, causing only temporary cessation of the bleeding. Digital pressure, too, answered for a time. The powdered suprarenal extract was used frequently; it was dusted on the wound, it was made into a paste, and finally the wound was filled with it and covered with collodion. A message that the boy was bleeding to death was sent. He was deathly pale and had a feeble fluttering pulse. Blood oozed from the tongue. Under chloroform, after clearing away the clots the wound was freely cauterized

with a Palquelin's thermo-cautery. The bleeding instantly stopped, the wound healed in a few days, and recovery took place.

Treatment of Senile Pruritus.—Jaenicke (*Centralbl. f. Inn. Med.*, Dec. 1, p. 1193).—The skin in senile pruritus, is dry, owing to deficient nutrition of the superficial epithelium. The writer finds that the removal of these dead epithelial scales alleviates the symptoms. The skin is brushed for 10 to 20 minutes 3 times a day with a soft brush, which removes a quantity of powdered epithelium. After 4 or 5 days of the treatment, the quantity of powder removed is noticeably less, and the brush need be used only twice, or even once, a day. Later, intervals of 1 or 2 days may be allowed, or the upper part of the body may be brushed one day and the lower the next. For the first 2 or 3 days the itching is greatly lessened if spirit be applied after brushing and allowed to evaporate. Afterwards the skin becomes too tender for this application, and the inunction of lard or lanoline gives the best results. Baths, and especially warm baths, should be abandoned.

CASE 1.—A man, aged 72, had had disturbed nights for 3 years owing to pruritus. Brushing caused total cessation of the itching for 2 or 3 weeks, when a repetition of the course was necessary.

CASE 2.—A man, aged 66, suffered from pruritus and bronchial asthma. A fortnight's brushing caused the pruritus to disappear and afterwards weekly brushing prevented a recurrence up to the time of his death, a year later.

CASE 3.—A woman, aged 68, had chronic colitis and pruritus. After 3 weeks' treatment, the pruritus had so far disappeared as to allow undisturbed sleep.

SURGERY.

Spontaneous Disappearance of Senile Cataract.—Sydney Stephenson, M.B., C.M. (*Lancet*, April 26, p. 1175).—The spontaneous disappearance of senile cataract must be rare, at all events in countries like England, in which it is not often allowed to become "over-ripe." The "second sight" may come about in several ways:—(1.) The commonest is for the opaque lens to become slowly absorbed—a process that seemingly may extend even to the capsule. A considerable number of such cases has been reported during the last few years in continental literature, but in Great Britain the writer can find only one case, which was published by C. Higgins in 1892 (*Transact. of the Ophthal. Soc.*, vol. xii., p. 107). The disappearance of lenticular opacities in diabetic patients is excluded. An instance of that has been recorded by Tannahill (*Brit. Med. Jour.*, Jan. 31, 1895). (2.) A so-called "milky" or "Morgagnian" cataract may form, the hardened nucleus floats in a liquefied cortex, the whole being inclosed within the lens-capsule. As pointed out by Fuchs, the cortex may be converted into a clear, transparent fluid through which the patient distinguishes external objects, especially when the nucleus lies out of the line of sight, as in the upright position. (3.) After the formation of a Morgagnian cataract the cortex may be absorbed and the nucleus may sink below the line of sight. (4.) The affected lens may be dislocated into the vitreous chamber, where it may remain for years apparently without entailing harm to the eye. A case of this kind was published as long ago as 1690. In the following case cure was brought about by the spontaneous, successive dislocation of each lens.

A highly intelligent woman, aged 55, consulted the writer on Aug. 17, 1892. Her sight had been imperfect for many years. There had

been several attacks of ocular inflammation diagnosed as "gouty." The eyes had become worse since the menopause 3 years before. Right vision: fingers at one metre, and Jaeger No. 1 at 8 cm. Left vision: fingers at 4 metres and Jaeger No. 1 at 4 cm. The vision of the left eye was improved to $\frac{1}{2}$ with a — 9 D. spherical lens. The tension of the eyeballs was normal. The right crystalline lens was opaque in its deeper parts, and there was a polar opacity. The left lens exhibited opaque striæ and also a posterior polar opacity. "Floaters" were present in the vitreous humour of each eye.

Eight years later (Aug. 9, 1900) she was seen again. For several years she had been blind with the left eye and able to see print with the right only by holding it close to the face. On July 25, whilst at tea, she found that with the left eye she could see the teacups and pattern of the tray. Next day she saw, for the first time for several years, the cornice of her sitting-room. The sight of the left eye continued to clear at the top, but a crescentic mass remained at the bottom of the field. On July 29 with the left eye she could in church make out the clergyman in the pulpit. On Aug. 2 whilst coming upstairs, the crescentic mass suddenly disappeared, and soon afterwards she could distinguish the lettering on passing omnibuses.

With the right eye she could count fingers at 35 cm. and read Jaeger No. 4 at 8 cm. The vision of the left eye with + 10 D. was $\frac{3}{4}$ and with + 14 D. the smallest Jaeger type could be read. There was a nearly mature cataract in the right eye. In the left the anterior chamber was deep, the pupil clear and black, the iris sluggish and tremulous, and the tension normal. With the ophthalmoscope the dislocated lens was found lying in the lower part of the vitreous chamber.

On Jan. 6, 1902, the sight of the right eye became so much clearer that she could distinguish her husband across the room. For the next few days the eye was somewhat uncomfortable, mainly because there was a sort of "wobbling," and prismatic colours were visible when the electric light was used at night. On Jan. 16, whilst at dinner she suddenly discovered that the sight of her right eye had become quite clear. Upon examination the pupil was clear and black, the iris tremulous, the anterior chamber deep, and the crystalline lens dislocated into the lower part of the vitreous chamber. Tension was normal. Sight with a + 9 D. lens was $\frac{3}{8}$ and with a + 12 D. lens the smallest print could be read.

See also "REVIEW," Vol. III., p. 266.

Treatment of Poisoned Wounds.—Percy A. Longhurst (*Brit. Med. Jour.*, Oct. 13, p. 1107).—A wound inflicted by a septic instrument will often heal by first intention if it be washed at once and a ligature applied to prevent absorption of the virus and encourage bleeding. A bandage, pocket handkerchief, cord, or rubber band, tightly applied above the wound will prevent as far as possible absorption of the virus and diffusion into the general circulation.

Punctured wounds inflicted by blunt-pointed instruments may be attended with scarcely any hæmorrhage, but if a ligature be applied above the wound the part below will become œdematous in a few minutes, and pressure will readily expel blood and serum from the water-logged tissues, and thus eliminate some of the virus. The wound is then treated in the usual way, laid freely open (if necessary) and if deep thoroughly washed out with some antiseptic solution, and a drainage tube inserted and shortened gradually as the wound heals.

If inflammation follows, the wound, of course, would be freely incised and washed out. The virulence of post-mortem wounds depends upon the length of time the corpse has been kept. As

decomposition sets in by the action of the bacteria of putrefaction the "infective" organisms lose their powers. Hence bodies in which death has resulted from septicæmia, pyæmia, puerperal peritonitis, etc., should not be examined within 48 hours of death.

Treatment of Urinary Affections by Permanent Drainage through a Catheter.—

Henry Berthier (*Gaz. Heb. de Méd. et de Chirurg.*, March, p. 265).—Complete or incomplete retention of urine may be treated by drainage through the natural channels or by cystotomy. Inability to empty the bladder satisfactorily almost always results from enlarged prostate or stricture of the urethra, but it also occurs in some cases of old cystitis with diffuse pericystitis and sclerosis, in cases of defective innervation, calculi, suppurative pyelonephritis, or tuberculosis of the urinary tract. Experiments with a permanent catheter in cases of enlarged prostate were first published by Guyon and Michon (*Les Annales Génito-Urinaires*, 1895). Even when there are no signs of toxic absorption this treatment is useful as it allows free evacuation of waste products. It is specially valuable when repeated catheterisation is required, when there is difficulty in passing a catheter through the prostatic urethra and when injuries from the catheter are likely to occur. The urethra is dilated by the presence of the catheter, and according to Guyon, Bazy, and Pasteur, a diminution in the size of the prostate invariably occurs. If the bladder is distended it should be emptied slowly, and the catheter should not be left open until 24 or 48 hours have elapsed. If there is any septic condition, either localised in the bladder or communicated to the urinary tract, and more or less marked symptoms of a general infection, a permanent catheter is of great benefit. If the condition is limited to the bladder, and catheterism is easy, the catheter may be passed once or twice daily, and the bladder washed out. Should symptoms of general infection appear

permanent drainage is necessary. After 3 to 5 days of this treatment the urine becomes clearer, the temperature progressively falls, the dry tongue becomes moist, the dyspnoea abates, excitement is calmed and appetite returns. Complete cure is never effected, the prostate always remains enlarged and some degree of bladder infection remains, but from this slight degree patients do not suffer, and with hygienic precautions and vesical lavage, they may have long periods of respite. On the reappearance of symptoms of infection or of difficulty in micturition the permanent catheter is replaced, and retained sometimes for a few weeks, sometimes for several years. Excellent results are obtained from this treatment when the prostate is greatly hypertrophied, and the urethra consequently obscured, or when owing to sclerosis and distention of the bladder catheterism is constantly required. Patients can follow their employments when not too infirm or old. In some cases the catheter is kept closed, and is only opened at certain hours, in others the end of it is placed in a receptacle worn inside the trousers.

A man leading an active life wore a Nélaton's catheter for 10 months, and much preferred this to the trouble and pain of frequent catheterism. Another patient, aged 73, had considerable septic absorption. After 7 months treatment he now passes the catheter thrice daily and is in good health. See chart 1 which shows the necessity for prolonged treatment, and its result. Bazy treated similarly an old man with enlarged prostate who had also congestion of the lungs, and a large inguinal hernia. After 4 months he was able to leave hospital wearing a permanent catheter. Another patient with inoperable perineal fistula has worn a catheter for 7 years and has led an active life. In another case, in which cystotomy had been performed for vesical tumour with retracted bladder, the patient has for 2 years worn a catheter, which is kept constantly open in order to avoid leakage through the hypogastric fistula.

In stricture of the urethra the results are sometimes excellent, and cure may be effected. Drainage by the natural passages may however be difficult or impossible. If the symptoms of infection are slight rapid dilatation and retention of a catheter for 24 hours soon allow lavage to be employed, and then a permanent catheter may be introduced. Chart 2 belongs to a case in which a catheter was placed, 6 days after dilatation was begun, in a bulbar stricture which only admitted a No. 6 sound. If dilatation is too slow and septic absorption considerable, internal urethrotomy is indicated with a permanent catheter introduced immediately. The result is comparable to opening and draining an abscess. If the urethra is not permeable a fine bougie should if possible be introduced, and external urethrotomy performed, the contracted portions incised and excised, and a permanent catheter introduced. If operation cannot be attempted, soothing medical treatment and hypogastric puncture may be tried. This sometimes gives rest to the parts and enables other treatment to be adopted.

Cystotomy should be the last resort. It is indicated only (1) when the upper end of the urethra cannot be found in the course of an external urethrotomy, (2) when there is a membranous contraction and it is necessary to open the bladder in order to catheterise the posterior part, (3) when there is prostatic enlargement, stricture, and sepsis in an old man, or (4) when there is an acute septic condition requiring immediate and extensive drainage. In other vesical infections when there is neither an enlarged prostate nor a stricture, the permanent catheter gives good results. In purulent conditions accompanying calculi it improves the septic state, and allows of the introduction of the lithotrite. Chart 3 is taken from a young man with considerable septic absorption caused by a large vesical calculus. A permanent catheter caused sufficient disinfection to allow the bladder to be opened anteriorly, the calculus removed, and the incision immediately closed.

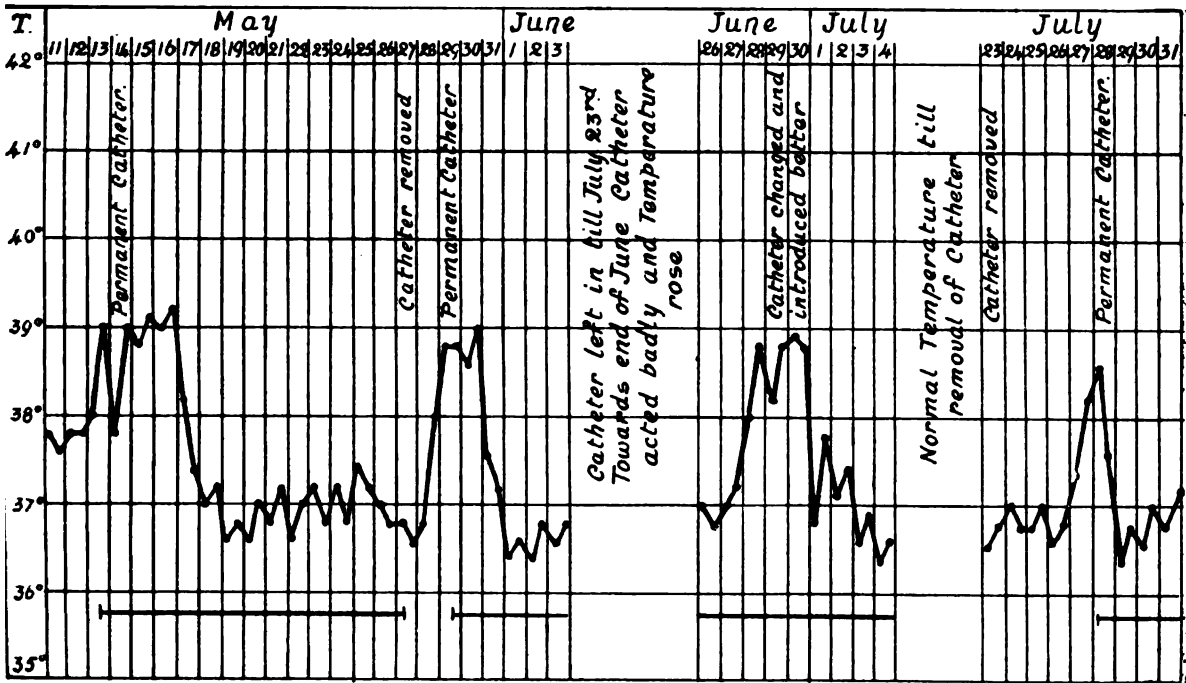


CHART I.

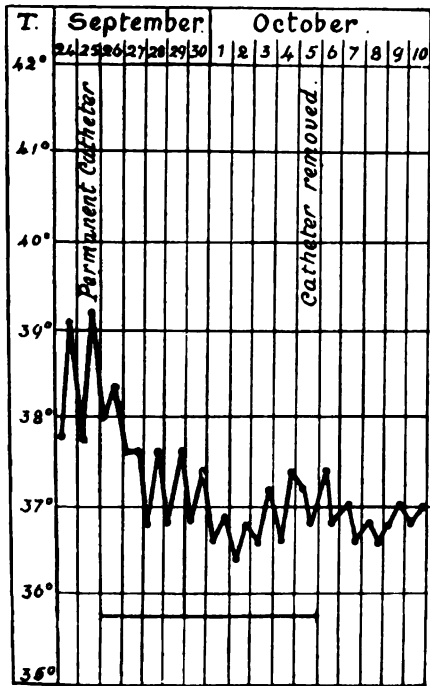


CHART 2.

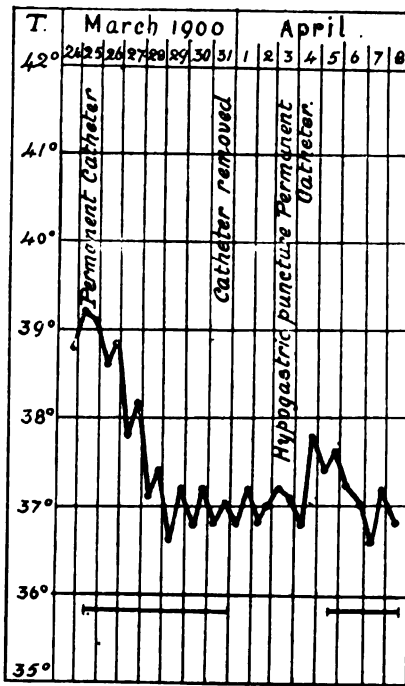


CHART 3.

The technique is as follows: The catheter having been introduced is kept in place either by a stitch, or by passing a piece of india-rubber drainage tube over the catheter close to the meatus and splitting the end of it into three strips which are passed along the penis and are fastened by another strip made from a drainage tube and buttoned like an elastic ring round the penis. The catheter must be changed every 5 or 6 days and the urethra washed out.

The writer claims that this treatment diminishes vesical stagnation, and prevents or decreases toxic absorption. If the bladder is not too sclerosed it increases its tonicity. It decreases prostatic congestion, protects the urethra from injury in catheterism, and, by preventing retention of urine obviates infection of the kidney. If there is already a pyelonephritis it prevents stagnation in the bladder of pus from the kidney, and thus drains the whole urinary tract.

Saddle Nose Treated by Subcutaneous Injection of Paraffin.—Scanes Spicer, M.D., B.Sc. (*Clinical Jour.*, April 9, p. 399).—A woman, aged 25 (Fig. 1), had nasal suppuration and fœtor since childhood. There was no history of traumatism or acquired syphilis, or undoubted evidence of congenital taint. She had a well-marked tip-tilted saddle nose, and stunting of the nasal framework. There were crescentic wrinkles from eye to eye over the bridge of the nose, which are shown in Fig. 3, a drawing of a cast. The nasal suppuration was treated by ordinary methods and the shape of the nose was improved by injecting sterilised paraffin, according to the method of Gersuny ("REVIEW," Vol. IV., p. 535). The result is shown in Figs. 2 and 4, the latter represents a cast taken 2 months after injection.

The technique is as follows: A mixture of hard and soft paraffin, which melts at 40° C. (105° F.), and is sterilised and kept in sealed bottles, was used. The skin of the nose is

cleaned first with alcohol, then with liq. hydrarg. perchlor. The syringe and needle are cleansed and boiled in the steriliser, which is used as a water-bath to heat the paraffin and syringe. A 15-minim German glass hypodermic one was used, like that for injecting tuberculin. In this case 10 or 12 syringefuls were injected under the skin, some downwards over the nasal bones, some upwards from the sides of the nose into the depressed gap. The injected paraffin was moulded by an assistant's fingers, so as to shape the part before setting. The syringe was removed for refilling from its socket in the needle which, once *in situ*, was left there until enough vaseline had been injected. The skin was then cleaned and the points of injection sealed with collodion. There was no pain, though the nose looked a little tense and brawny. No paraffin apparently passed into the eyelids. In a few days the upper eyelids became somewhat œdematous. Ever since the operation the œdema has varied in amount from day to day. In the left upper eyelid is a little nodule of the size of a large shot. This has been cut down on, but it does not seem possible to squeeze it out. Ten months have elapsed since the operation and the nose remains in the same state as when injected. The result therefore seems permanent. There is a great improvement in appearance; the patient's mother "is proud of her." The nasal suppuration and general health are alleged to have improved. The passage of a nodule of paraffin into the upper eyelid is disappointing, and so is the œdema of the lids. The former is not improbably due to the physiological action of the pyramidalis nasi, which would tend to shift movable bodies upwards and into the orbit. The latter may be explained on the theory of a blockage of lymphatic vessels by the paraffin, some of which has become divided into a molecular condition. However, the upper lids were inclined to be puffy before the injection. In future cases the writer will take still more care to put pressure on the root of the nose at



FIG. 1.



FIG. 2.



FIG. 3.



FIG. 4.

the time of injection and that the paraffin is not any hotter than is necessary to mobilise it. Repeated injections of smaller quantities at the lowest possible pressure may be better than injection of the full amount at once. The method appears to offer many advantages over plastic operations.

Correction of Nasal Deformity by Injections of Paraffin.—Dr. Broeckart (*Rev. Hebdom. de Laryngol., d'Otol., et de Rhinolog.*, Dec. 7. p. 673).—Recently Gersuny, a Vienna surgeon, recommended subcutaneous or interstitial injections of white vaseline for the correcting of certain acquired and congenital deformities (see "REVIEW," Vol. IV., p. 535). Pflannenstiel of Breslau has recorded a case (*Centralb. f. Gynäcol.*, 1901, No. 2) in which the injection was followed by symptoms of pulmonary embolism. The patient recovered. An analogous case was published by Halban of Vienna, in which pulmonary embolism supervened after interstitial injections of vaseline. Kapsammer has reported (*Wien. Klin. Woch.*, 1901) 3 cases of incontinence of urine treated in one sitting by injecting 10 c.c. of vaseline. Rohmer, of Nancy, (*Clin. Ophthalmol.*, 1901, No. 52) used the method for ocular prosthesis. A fortnight after the enucleation of an eye he applied cocaine to the conjunctiva and injected about $2\frac{1}{2}$ c.c. of vaseline into the centre of the conjunctival cicatrix; 8 days later he injected another $1\frac{1}{2}$ c.c.; 48 hours later he applied the artificial eye to which the patient was able to impart fairly extensive movements. He has recorded very satisfactory results in 5 similar cases. Eckstein has treated by this method fissures of the palate causing defects in pronunciation (*Semaine Méd.*, 1901, p. 262). Alt has used injections of white vaseline in a case of mastoid fistula following a radical operation. After injecting about half a c.c. there remained only a small punctiform fistula. The writer advises this procedure in numerous malformations of the ear.

The vaseline disappears little by little, whilst a stroma of connective tissue encloses the paraffin, which, hardened, alone remains in situ. Thus the remote results of the method are not identical with the immediate: the injected mass diminishes perceptibly. Delangre, who believes that the absorption is negligible, has stated that there is a slight settling down of the vaseline due to infiltration into the interstitial-cellular tissue and that the prosthesis thus obtained is not definite.

These contradictory results induced Eckstein to obtain a paraffin of higher melting point than that of the white vaseline used by Gersuny. Injected into a medium of a temperature much below its own it cools so quickly that it cannot produce emboli. It remains where the operator has placed it and is not moved by the contraction of neighbouring muscles. With Eckstein's paraffin there is absolutely no absorption. Experiments made on guinea-pigs showed that even after 6 months none of the injection had disappeared; the weight of the paraffin had remained exactly the same. There is soon formed around the paraffin a capsule of connective tissue in which there are no cells or blood vessels; thus absorption is not possible. No fibrous tissue penetrates into the mass of paraffin as in the case of vaseline.

The following are cases treated by Eckstein's method:—

CASE 1.—A girl, aged 17, had tertiary syphilis, and owing to the destruction of the cartilaginous portion of the nasal septum the nose was sunken. The region having been made thoroughly aseptic, 2 c.c. of Eckstein's paraffin were injected into a fold of the skin, during which an assistant held the root of the nose with his thumb and forefinger to prevent the paraffin passing in that direction. While the cannula was in position the nose was moulded into as natural a shape as possible. The cannula was withdrawn and a small piece of plaster applied. Though performed without an anæsthetic the pain was insignificant. Next day there was slight œdema of the nose and of the eyelids.

There was no inflammation and no pain on pressure. The æsthetic result was very satisfactory. After two days the œdema had entirely disappeared, but, as there still persisted a slightly exaggerated curve, a second injection of 1 c.c. of paraffin was made, nearer the tip of the nose. This second injection was not followed by any reaction or œdema. Since then the result has been maintained and the nose is at least presentable.

CASE 2.—A young lady, aged 19, consulted the writer for a slight diminution of hearing and incomplete nasal respiration. The nose was deformed. The point was displaced to the left, and the curve of the nose was exaggerated—according to the parents, from a fall at the age of 3 years. Rhinoscopy showed marked deviation of the septum and complete blocking of the left nasal fossa. An injection of 2 c.c. of paraffin corrected the deformity.

CASE 3.—A boy, aged 15, had a disfiguring epicanthus—a cutaneous fold covering the inner angle of the palpebral fissure which is often accompanied by flattening of the bones of the nose. An assistant having raised a fairly large fold of skin to efface the epicanthus the writer injected a c.c. of paraffin, which gave to the root of the nose a good shape, and corrected the deformity. Slight temporary œdema of the eyelids was the only complication.

CASE 4.—A man, aged 31, fell on the nose at the age of 5. The nose was sunken and had a large and flattened dorsum. The point was slightly pushed towards the left. One c.c. was injected and the nose modelled. The result was perfect.

leg, about midway between the knee and the ankle. Calf lymph supplied by the Glasgow Health Office was used, and more than the usual antiseptic precautions were taken. The middle third of the leg was cleaned with turpentine and then with methylated spirits, after which the part was again rubbed with carbolic solution (1 in 40). The lancet used was always kept in carbolic solution. To prevent contact of stocking or clothes with the wound until it was quite dry, a large adhesive thick felt plaster was applied around the vaccination mark and kept in position by a strip of adhesive plaster. The vaccination was successful and constitutional and local symptoms were insignificant.

On the 20th she complained of pain in the back, and felt ill. On the 21st there was also stiffness of the neck and jaws. Through misapprehension the adhesive plaster was not removed. When crust and plaster were taken off the vaccination mark was found covered by a greyish slough, and there was a slight discharge of thin dirty yellow pus. There was no surrounding inflammation or tenderness of the popliteal or femoral glands. A bread poultice was ordered, and the sore became healthy and was dressed daily with moist boric lint. Three weeks after inoculation the sore was healed. On the 22nd the jaws were stiffer, and in the evening the mouth could be only half opened. No rigidity of the masseters or depressors of the jaw could be detected. The head was retracted, though the patient could raise it and touch the sternum with the chin. She complained of stiffness and pain in the back of the neck, but the muscles did not feel specially rigid. Slight tenseness of the abdominal muscles was felt. The temperature was normal. On the 23rd she was much better. She could open the jaws well, but in the evening less widely. Pain and twitching of the muscles of the abdomen in the region of the right groin were complained of, and some stiffness in the right leg. The left knee-jerk was active, the right was exaggerated, showing a tendency to clonus. Chloral hydrate was ordered in 20 gr. doses every 2 or 3

Tetanus after Vaccination on the Leg.—William Findlay, M.D., and John Wainman Findlay, M.D. (*Lancet*, Feb. 22, p. 506).—A woman, aged 21, was revaccinated on March 8, 1901. As she wanted to use her arms she asked to be vaccinated on the leg. Accordingly an area of a little over half a square inch was inoculated on the outer side of the right

hours till the spasm was relieved and sleep induced. In spite of the administration of 60 gr. she slept little. In the morning the jaws could be opened sufficiently to allow the tongue to be protruded. The abdomen felt board-like, and now and then spasms or paroxysmal contractions occurred. The spasm in the cervical muscles was absent for short periods, and varied in intensity from time to time. No chloral was given, and by the afternoon she had a fixed expression, as if she had suddenly become aged. The eyes had a peeping look with small palpebral fissure, and could not be fully opened. The naso-labial folds and those of the angle of the mouth were deeper than normal, and the orbicularis oris and buccinators were tense. There were pain and stiffness in the back. The head was retracted. The extensor muscles of the neck were hard and tense and, for the first time, the masseter muscles were felt to stand out as stout bands. The legs were kept fully extended, and the feet were so strongly extended as almost to continue the line of the legs. By gentle movement, however, the spasm could be overcome, and the feet could be brought almost to a right angle with the legs, but no further. The patient objected to have her knee- and hip-joints flexed and could not sit up in bed. Though tetanus was suspected, it seemed that all the symptoms could be explained by hysteria. The varying muscular rigidity, its partial yielding to gentle manipulation, and the distinctly neurotic character of the patient, in spite of the absence of definite hysterical stigmata, seemed to point in this direction. But now the diagnosis of tetanus could not be avoided, cerebro-spinal meningitis being excluded by the absence of fever, headache, vomiting, etc. Gowers states that "there is an absence of rigidity in the neck in hysteria."

From the 25th to the 26th 240 gr. of chloral were given in the 24 hours and by the 27th a further 180 gr. The patient was under the influence of the drug and was silly and stupid—like a half-

drunken person. The eyes were more widely opened, the ominous lines about the nose and mouth, and slight sardonic grin were no longer perceptible. Bromide was substituted for the chloral, but the spasms in the abdomen and the legs returned, necessitating a re-administration of the drug. From April 6th to the 22nd the spasms were controlled by the continued administration of chloral day and night. So long as the patient was under the influence of the drug the spasms were mild and the muscles of the face and neck were well relaxed. During the next fortnight the chloral given was gradually lessened until it was discontinued, and bromide of potassium in 15 gr. doses 4 times daily was substituted for a week. During the illness about 8 oz. and a half of chloral were taken.

In the first week of May, a day or two after the chloral was withheld, the spasms threatened to return on the least exertion. Towards the end of the month the patient could walk with assistance. The trismus remained to a slight extent and was the last of the rigidities to disappear. The muscles of the arms were never affected.

The writers have found references to 10 cases in which tetanus has occurred after vaccination. Six are reported from America and 2 from the West Indies, where tetanus is very common. A single and fatal instance is reported in Great Britain. (*Appendix IX. to the Final Report of the Royal Commission on Vaccination*, 1897, case X., p. 6, and *Lancet*, Nov. 2, 1889, pp. 922 and 970). In a case related by Toms tetanus occurred 24 days after vaccination in a weakly girl, aged 5½ (*Med. News*, Feb. 24, 1884). Calf lymph was used with all antiseptic precautions. On the eighteenth day the temperature was 100.5°; the vaccination ulcer was deep and slightly indurated, and discharged sanious pus. These conditions improved under treatment. Six days later some trismus was observed. The rigidity spread, opisthotonos developed, and death from œdema of the lungs occurred 35 days after the vaccination. At the time of death the ulcer

on the arm appeared healthy. Against the theory that the tetanus was due to vaccination were (1) the presence of sore mouth; (2) the length of the incubation period if counted from the vaccination; and, most important, (3) the inability to cultivate the tetanus bacillus from the wound of the arm. In another case investigated by the Royal Commission a female child, aged 2 months, developed trismus on the twenty-third day after vaccination (*Appendix IX.*). The arm did well until the ninth day, when it became inflamed. Suppuration set in on the fourteenth day. Death with opisthotonos occurred on the twenty-sixth day. Vaccination had been performed from the arm of a female infant, aged 5 months, and at the same time and with the same lymph 6 other children were vaccinated, and none developed tetanus or sore arms. Twenty-eight days after the death of the child another infant, aged 10 days, died at a house half a mile off, from tetanus supervening on an unhealed umbilicus. In another case (*Maryland Med Jour.*, 1882-83, vol. ix., pp. 241-245, and *Lancet*, Nov. 4, 1882, p. 792) a healthy man, aged 40, some days after the operation, which was performed about the middle of Jan., was exposed to severe cold. The arm swelled and the integument around the scab inflamed. On Feb. 7 he noticed a little stiffness of the jaw and there was slight opisthotonos, which was accompanied on the following day by profuse perspiration and spasms of the lower limbs. Death occurred on the 13th.

In the present case symptoms appeared 12 days after the vaccination and 2 days after exposure to a draught. According to Gower's, "The interval between the infliction of the wound and the appearance of the first symptoms of tetanus is usually from 5 to 14 days. Idiopathic tetanus usually follows exposure to cold, and when due to a single exposure (so that the interval could be ascertained) it has rarely exceeded 2 days and has frequently been only a few hours. In many cases classed as traumatic tetanus there has been an exposure to cold after the receipt of the

wound." It is now generally accepted that all cases of tetanus are traumatic, and that the exposure to cold predisposes the nervous system to suffer from a minute dose of the tetanic poison." If the poison of tetanus was introduced by the process of vaccination, whence came it? The lymph cannot be blamed, for several people were inoculated from the same tube, and the patient alone developed tetanus. Further, had the lymph been the infective agent the whole output of a certain date would probably have been contaminated, and an outbreak would have resulted, as occurred in Italy and more recently in St. Louis from using diphtheria antitoxin (*Brit. Med. Jour.*, Jan. 11, p. 104). In the case examined by the Royal Commission human lymph was used, and only one child of the 7 vaccinated from the same source and in the same manner developed tetanus. No more can the lancet or the hands of the operator be blamed, for out of the large number vaccinated on that particular day only this one developed tetanus. The source of the infection must have been in the patient's own skin. She wore a long dress, which trailing along the streets could hardly fail to sweep up material, composed of finely pulverised earth, horse-dung, etc., likely to contain tetanus bacilli and spores.

Circular Incision of the Skin of the Thigh in Varicose Veins and Ulcers of the Leg.—

C. Wenzel, of Buenos Ayres (*Berlin. Klin. Woch.*, Feb. 10, p. 132).—Though Trendelenburg's method of ligature of the long saphenous vein in the thigh was a most important advance in the treatment of varices and varicose ulcers the results are often disappointing. If the ulcer heals the thickened degenerated skin remains and may break down afresh at any time. After ligature of the long saphenous vein other veins previously inconspicuous and unnamed, enlarge. A second or third operation is required

for the ligature of these. To obviate these disadvantages the writer makes a transverse incision through the skin about 4 in. above the patella. The superficial veins, many of which do not show through the skin and would be overlooked but for the incision, are divided and ligatured one by one. The incision is gradually prolonged right round the thigh until all the superficial veins are ligatured. In some of the earlier cases the circular incision was not completed. The result was generally disappointing, since the smallest vein may enlarge and give trouble when the collateral circulation is established through it. Wenzel has employed the complete circular incision in about 26 cases. Healing by first intention was obtained in all, and no relapse of the varices or ulcers has occurred, as far as can be ascertained, though the first operation was performed more than 3 years ago. The incision should never be made below the superior angle of the popliteal space; the most suitable site usually is the junction of the lower and middle thirds of the thigh or somewhat higher. The incision should be made deliberately in order to avoid wounding the veins, which should be freed for about 1 to 2 in. and divided between two ligatures, and to save any branches of cutaneous nerves which may be recognised. After closure of the incision and completion of the dressing the limb is bandaged from the toes to the pelvis and raised in a slightly flexed position. In the after treatment any existing ulcer should not be dressed at the same time as the operation-wound. Under a dry dressing ulcers heal with remarkable rapidity after the operation, and it is generally unnecessary to attend to them until after removal of the sutures. The patients leave their beds 12 to 14 days after the operation, with some form of elastic support, which prevents œdema if worn for 3 or 4 weeks. The results are particularly good when the varices are complicated by phlebitis, periphlebitis, or thrombosis. Contra-indications are impermeability of the deep veins and lymphatics, and phlegmasia alba dolens.

Anomalies of the Labial Fræna.—Percy A. Longhurst (*Brit. Med. Jour.*, July 6, p. 45).—Peculiarities in the formation of the labial fræna are not uncommon. Sometimes the superior frænum persists as a fibrous cord extending from the mucous membrane of the lip, passing between and separating the central incisor teeth, and continuing its attachment along the middle-line of the premaxillary portion of the palate, as far as the orifice of the anterior palatine canal. The redundant frænum is frequently noticeable as a fleshy body, which appears below the upper lip and rests between the two front teeth. The movements of the lip pull upon this bridle, ultimately causing separation of the teeth. In adults unsightly gaps between the central incisor teeth are frequently due to this cause. Other causes are deficient lateral pressure from absence of teeth and various other dental causes. Heredity plays an important part in the causation.

As regards the etiology of this anomaly the following seems a plausible explanation: A portion of epiblast from which the epithelial structures are derived is included during the union of the mesial nasal processes of the fronto-nasal processes, which forms the os incisivum (endo-quattrion). Owing to deficient union or delayed union this portion of epiblast sometimes fails to be sufficiently absorbed and persists as a redundant frænum.

The inferior labial frænum is formed by an involution of epiblast between the mandibular plates (first branchial arches), and is continued between the mandibular plates as far as the root of the tongue, where it meets the tuberculum impar from which the anterior part of this organ is developed, and forms the lingual frænum. When approximation of the mandibular plates occurs the labial frænum is differentiated from the lingual—its continuation. Redundance of the latter is associated with tongue swallowing, deficiency with tongue tie. This inclusion of epiblast takes place at a very early period of intrauterine life, as all the various fissures of the face are closed by the tenth week.

The treatment of redundant superior frænum is to divide it midway with blunt-pointed scissors, and then to cauterise the cut surface with pure carbolic acid or silver nitrate. When there is much redundant tissue it is necessary to remove a small V-shaped portion. The frænum should not be divided higher than midway between the free margin of the gum and the reflection of mucous membrane of the lip. A mechanical apparatus is often necessary to draw the teeth together.

Malformations of the inferior labial frænum are frequent and seldom require treatment, although division may be necessary.

Preparations for Operation.—E. W. Morris (*London Hosp. Gaz.*, p. 182).—The following is the routine employed in the London Hospital. The instruments are boiled in a one per cent. solution of washing soda for at least 5 minutes. The soda prevents the rusting of steel instruments, and saponifies any fat remaining in the crevices of an instrument from a previous operation. Most of the plated or steel instruments may be boiled for 5 minutes in soda solution without injury; but not knives, the cutting edge of which is spoiled. Knives should be placed in boiling soda solution for not more than one minute and then allowed to stand in methylated spirit for 2 or 3 hours. Needles are boiled after being threaded. If silk or silk-worm gut is to be used a separate boiler containing no soda should be used, as the soda lessens the breaking strain of both silk-worm gut and silk. Boiling the needles in this soda-less water tends to blunt them. The best method would be to treat the needles by dipping them (unthreaded) for a minute in boiling soda solution, and to keep them in a jar of methylated spirit until required, removing only those that may be required for any particular operation by means of sterile forceps. Those used should be carefully cleaned by hand and re-sterilized before being put back into the

stock jar; the spirit in this jar should be frequently changed or the needles will rust. After being boiled the instruments are placed in flat trays containing 1 in 40 or 60 of carbolic acid; or they may be placed in the trays on a sterile towel and used dry, if freedom from dust in the air of the operating room can be assured; in dust-laden air this method would be dangerous.

Careful cleaning of the instruments immediately after operation is important, and is the first step towards rendering them sterile for the next operation. They should be well brushed with a nail-brush and soap in weak soda solution, then placed in methylated spirit for an hour or two (to remove moisture from the hinges, etc.), and finally wiped with a cloth or leather. Never let the blood set on instruments before cleaning, and be specially careful of those having cavities or irregularities which would favour the harbouring of fat—*e.g.*, the teeth of a saw.

The method adopted for sterilizing dressings is to place them, loosely packed, in boxes made of copper, tinned over, and containing a wire cage to facilitate the circulation of the steam in the box. These boxes are then placed open in the sterilizer and are subjected to a steam heat of 250° F. (under a pressure of 15lb. to the inch) for half-an-hour. The steam is then removed from the chamber by a suction apparatus, the sterilizer being kept hot by means of steam in the surrounding jacket. This is done in order that the dressings may be dry. Finally, the tins are removed and sealed down with a pad of sterile cotton, which acts as an air filter, preventing subsequent contamination.

Silk, obtained in hanks from any of the instrument houses, is prepared as follows: loosen the silk from the hank and boil for 20 minutes on each of 2 successive days. Keep the silk in plain boiled water, not in disinfecting solution, between the 2 boilings, in order that spores, if present, may germinate. Tie the silk in muslin during the boiling to prevent tangling. When the boiling is over wind the silk, with gloved

hands, on boiled glass bobbins, and store in absolute alcohol. It is a defect that the alcohol makes the silk rather harsh and wiry. It should be soaked in warm carbolic solution for a few minutes before being used or it is apt to snap. There is no reason why it should not be stored in 1 in 20 carbolic solution, other than that it is turned brown. In using silk at any operation, cut off from the reel what is wanted and be careful not to contaminate the whole reel. Many boilings rot silk.

Silk-worm gut and horse-hair are boiled 10 minutes and kept in 1 in 20 carbolic solution. They are always re-boiled, if there is time, for extra safety, just before being used. Re-boiling does not appear to injure them.

Catgut is prepared as follows:—Soak for 15 or 20 minutes in several changes of warm water until all dressing is removed; transfer to strong methylated spirit for half-an-hour to harden, wind on glass reels, soak twice in ether for 24 hours to remove fat, transfer to solution of biniodide of mercury, one per cent. in methylated spirit, and allow to stand for 24 hours, change the biniodide solution and allow to stand a further 48 hours. Many cultures have been taken of catgut prepared in this way and it has always been sterile. It is stored in methylated spirit to which is added carbolic acid, 1 in 40. The addition of the carbolic is a protection in case the spirit gets watered down by wet catgut being returned to the bottle. The catgut should be soaked in warm carbolic solution for 10 minutes before being used. It is very wiry when taken out of the spirit. Kangaroo tendon is prepared like catgut and stored in the same way. Neither of these can be boiled; they form a gelatinous and pulpy mass.

Drainage tube is cut into suitable lengths and perforated, cleaned with ether, and boiled for 15 minutes. It is kept in 1 in 20 carbolic solution. If many of these tubes are kept in a jar together, there is risk of contamination while choosing one at the time of operation.

Marine sponges are washed by hand in from

30 to 40 changes of water until free from sand and grit, then soaked for 24 hours in a 5 per cent. solution of hydrochloric acid. This acid solution is then washed out and the sponges immersed for 7 days in a 1 in 200 solution of biniodide. This solution is washed out in sterile water and the sponges are preserved in 1 in 20 carbolic ready for use. All manipulations during this process should be performed in gloved hands. All precautions to render sponges sterile are useless if care is not taken to keep them so during the operation, and they should not be handled by more persons than is necessary.

Rubber gloves are sterilised by boiling for 5 minutes, and are stored in 1 in 20 carbolic solution. Great care is needed in using them not to puncture them. No satisfactory cement has been devised for applying a patch which will withstand subsequent boiling.

Iodoform gauze is sterilized by means of formaldehyde vapour. This is most easily done by using the so-called formalin tabloids. A few are placed at the bottom of a glass jar, the gauze is then put in, the jar sealed down and allowed to stand for 7 days. Iodoform powder is also sterilised by means of these tabloids in one of the special dusting powder dredgers used in the Hospital.

Glass vessels used for storing sterile articles—catgut, sponges, etc.—should have shut-over lids, not ordinary stoppers. A satisfactory jar may be obtained in which the shut-over lid drops into a trough round the top of the jar, which trough can be kept filled with lysol or other disinfectant. The bowls and instrument trays used for supplying disinfecting solutions for hand dipping during the operation should be boiled, so that the outside as well as the inside is sterile.

To prepare the patient's skin around the field of operation, after removal of hair by a razor, it is rubbed with ether or turpentine to remove grease, then scrubbed with hot water and soap, and, lastly, 1 in 40 carbolic or 1 in 500 biniodide solution is applied.

Fracture of the Fifth Metatarsal Bone.

—Robert Jones, F.R.C.S.E. (*Liverpool Medico-Chirurg. Jour.*, March, p. 103).—Some months ago while dancing somewhat vigorously the writer trod on the outer side of his foot, his heel being off the ground. Something gave in the middle of the foot, and he suspected that the peroneus longus tendon was ruptured. With the help of a friend he managed to walk a distance of 300 or 400 yards. Next morning he examined the foot, and found that the tendon was intact. There was slight swelling over the base of the fifth metatarsal. Pressure on the spot caused exquisite pain. Crepitus could not be obtained. The slightest pressure of the body on the toes was painful, and when the pressure was deviated to the outer side, the pain was still greater. Extension of the ankle and flexion of the toes was immediately felt at the base of the fifth metatarsal. A radiograph showed fracture of the fifth metatarsal about $\frac{3}{4}$ of an inch from its base.

The writer had scarcely recovered when he saw a man aged 30, who, while fishing, and stepping from stone to stone, placed the whole weight of his body upon an inverted foot. He felt something crack in the ankle, and limped home. Radiography showed a precisely similar picture. A week later a man aged 54 was seen for an injury which befel him ten days earlier. In running to catch a train he twisted the outside of his ankle, and almost fell. He struggled on, however, caught his train, and for some days transacted his business. He had, however, considerable pain, and could just walk by placing pressure on his heel and inner foot alternately. There was swelling and ecchymosis over the metatarsal base, most of which appeared some days after the accident, with pain but no crepitus. Radiography showed the same fracture.

Apparently this fracture is common, though it does not seem to be mentioned in surgical literature. For many years the writer has observed cases with the same symptoms. He often suspected a fracture but he could not

demonstrate it. The symptoms are pain when the patient endeavours to put pressure on the toes or inner side of foot, when he flexes his toes, or attempts to invert the ankle. The swelling is generally localised over the fracture, and there is sharp pain when the surgeon puts his finger on the spot. There is generally no crepitus, deformity, or yielding on manipulation. The history is important, because it is sufficiently constant to form a factor in the diagnosis. There is a cross-breaking strain, directed anteriorly to the metatarsal base, and caused by body pressure on an inverted foot while the heel is raised. The fracture is therefore an indirect one. Authorities write to the contrary. H. Morris states: "Fractures of metatarsals are always the result of direct violence." Hamilton, who does not record an instance of this fracture, says, "The metatarsals can scarcely be broken except by a direct blow." Scudder, in his new work, states, "This fracture is caused by direct violence," and Gould and Warren refer only to severe crushing injuries as a cause of metatarsal fracture. The prominent base of the fifth metatarsal is closely bound to the cuboid and to the fourth metatarsal by ligaments so powerful that dislocation of the base is the rarest of accidents. It is obviously easier to break the bone than to dislocate it. When the heel, therefore, is off the ground, the weight of the body expends itself upon the fifth metatarsal, rotating it slightly inwards. The opposition to this force takes place at its base, where the strongly attached ligaments resist its displacement. A fracture occurs, therefore, exactly where it would be expected. Crepitus is not felt probably because the line of fracture runs towards the interosseous ligament and the fragments are therefore fixed or perhaps because of impaction.

Electric Light Conjunctivitis.—Harold B. Grimsdale, F.R.C.S. (*Med. Press*, April 22, p. 429).—Conjunctivitis from exposure to electric light is not common, and has received scant notice, although its congener, snow-blindness,

is well-known. Fuchs says that in severe cases there are besides conjunctivitis myosis and slight opacities and erosions of the cornea. These symptoms, like the erythema of the skin, from insolation, are produced by the ultra-violet, chemical light rays. In spite of the symptoms recovery generally takes place in a few days.

A labourer employed at an electric light works, attended hospital. Both eyes were streaming with tears, and the conjunctivæ were chemosed and reddened; at the margin of the cornea were several small papules. Vision was considerably reduced. On the preceding afternoon he repaired an arc lamp which was alight all the time. He noticed several times that the after-image of the lamp was unusually troublesome and prevented his working with comfort for long together. He finished his afternoon's work and went home. On his arrival there were great photophobia and lacrymation. $V = \frac{1}{15}$, the reduction being probably due to the lacrymation. The cornea was clear and bright; around its margins, however, were a few small papules such as often indicate the first stage of phlyctenulæ. The symptoms yielded readily to cocaine and cold compresses. Within 24 hours the photophobia almost ceased. The lacrymation and injection were more persistent but yielded to boracic acid irrigation within a few days. The man was advised to wear smoked glasses whilst at work.

Occasionally the exciting cause may be of very short duration. Thus an electrician, aged 26, attended hospital, and gave the following history. On the preceding afternoon he refitted incandescent lamps. A large part of the current was short-circuited, and a blinding flash occurred. He felt "half-blinded" and complained of rather sharp pain for a few minutes. He was inconvenienced for some hours by a positive central scotoma. Towards evening the symptoms disappeared. He was aroused about 2 a.m. by great itching of the eyes, which soon became almost unbearable. He felt as if the

lids were covered with sand. Tears were poured out in streams; there was, however, no blepharospasm. When seen the lids were very red and showed many papillæ, but the flow of the tears had ceased and the pain was subsiding. Vision was normal. A weak lotion of boracic acid and a 1 per cent. cocaine solution were prescribed. He was well in 2 days.

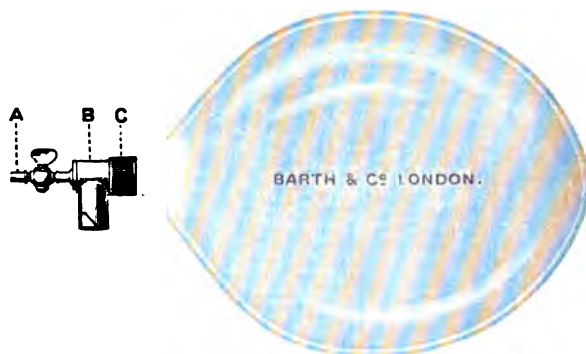
A medical man had been carrying on some experiments at a general hospital with lights very rich in ultra-violet rays. He noticed on several occasions a feeling of spasm of the lids, which lasted a few minutes, and then subsided. On Oct. 27, after a long day's work he felt much discomfort and lacrymation on his way home. On arrival he could not read, and went out about 5.30 p.m. "to walk it off." He was out for about an hour, during which time there was severe blepharospasm, so that he could hardly find his way. The eyes could not be kept open, and when opened were drowned in tears, which ran copiously down the face. A few hours later the lids were kept tightly closed, and could not be opened voluntarily, the conjunctivæ were much injected, lacrymation was copious, and the pupils were small. The blepharospasm was extreme, and the sensation was compared to putting a finger in the eye. Instillation of cocaine caused great smarting, but was soon followed by almost complete relief. Iced compresses were used in the night. These soon produced a soothing effect, and in about 2 hours he was able to sleep. There were several milder attacks of pain before morning. Next day he was much better, and was able to open the eyes fairly well. The lacrymation had diminished, and the injection was less. The spasm showed signs of returning once or twice but was easily controlled by cold. In 36 hours all signs of injection had gone, and he was able to resume work. But dark goggles were prescribed to prevent the access of the ultra-violet rays.

Whether the cold compresses have any great effect in the cure or not they afford great relief.

The best method is to wrap a large block of ice in a piece of old blanket or a woollen shawl. On this are placed 3 or 4 pads of gamgee tissue or compresses of linen. They are, of course, covered by the woollen wrap. They are then placed on the eyes in rotation; as soon as one is warmed by the heat of the body it is removed and relaid on the ice, and the next is placed in its stead. They must be changed every few minutes, probably every 5 or 10. As the patient is almost blind from the blepharospasm and the lacrymation he is not able to do this for himself, therefore the constant attention of a nurse is necessary. Probably dark yellow glasses would stop the active rays and therefore prevent snow-blindness even better than those of smoke-tint, but the common blue glasses permit the passage of ultra-violet rays and are of little value.

A Paper Bag for Clover's Inhaler.—

Rickard W. Lloyd (*Lancet*, Jan. 11, p. 99).—The use of the indiarubber bag in successive administrations of ether with Clover's inhaler as commonly practised is objectionable upon hygienic grounds. Apart from ordinary unwholesome conditions a patient might be suffering from tuberculosis or even zymotic disease. The writer uses a new paper bag for each patient. Paper bags may be used instead of rubber ones with



A—Tap for attachment of tube for supply of N_2O .
B—Angle mount. C—Strong rubber band to hold the paper bag air-tight to the angle mount.

other inhalers—e.g., Ormsby's. They are more economical, especially to those who do not frequently give anæsthetics and who often find the rubber perished when they require to use their apparatus after, it may be, a long interval. The practical advantages of the paper bag are: (1) hygienic excellence at small cost—about one penny; (2) moisture does not condense within it; (3) better preservation in any climate; (4) in use it maintains its position, whether empty or full, without tending to collapse completely; and (5) lightness and elegance—important considerations with a nervous patient. The bags should be kept dry and any accidental hole or tear may be readily patched with adhesive plaster. They can be obtained from Messrs. Barth and Co., of 45, Poland street, W.

OBSTETRICS AND GYNÆCOLOGY.

Simultaneous Intra-Uterine and Extra-Uterine Pregnancy.—Dr. H. P. Perkins (*Boston Med. and Surg Jour.*, March 20, p. 309).

—A woman, aged 26, had been married 5 years but had been pregnant only once, when early abortion took place. A period expected on Nov. 30 was missed. Two weeks later there was slight pain. On Dec. 21, while riding in a street car, she had very sharp darting pains low down on the right side. These were cramp-like, but were easier while standing, so that she rode a little further in this position. As they grew worse, she took a carriage and drove to the house of a friend. There she went to bed and was given a hypodermic injection of morphia, which relieved her. She had no fainting, nausea or evidence of shock.

On Dec. 24, when she was first seen by the writer, she complained only of a slight sense of fulness and pressure in the right side of the abdomen. This she thought was due to appendicitis, of which she had had two mild attacks. The temperature was 100·6° and the pulse was 110. The right iliac region was tender and slightly dull. The uterus was a little high, movable, and enlarged. On the right was an ill-defined, boggy mass, apparently closely connected with the uterus, extending outwards to the pelvic brim, and exquisitely tender. Pain was caused by moving the uterus upwards or to the left. The boggy feeling in the vaginal vault was thought to be due to a hæmatocele, the cause of which could not be determined. Most of the symptoms of extra-uterine pregnancy were absent. Immediate operation was proposed and declined. On Dec. 28 the temperature was 100° and pain was more marked. On the 29th the abdomen was opened, and from 20 to 30 ounces of fluid blood and clots escaped. A bleeding point was found in the right Fallopian

tube, which was enlarged and ruptured near the uterus. The broad ligament was infiltrated with blood. The ovary was much enlarged and cystic. The uterus appeared to be in a condition of early pregnancy. Owing to the friability of the tissues the ligature securing the tube had to be placed practically in uterine tissue. The vermiform appendix was adherent to the ovary, swollen, and congested; it was therefore removed. On the sixth day after operation, pains and hæmorrhage from the vagina began. Next day the uterus was dilated and curetted and the remains of an 8 weeks' ovum were removed.

See also "REVIEW," Vol. III., p. 64.

Total Hysterectomy for Complete Rupture of Uterus: Recovery.—J. A. Amann

(*Centralbl. f. Gyn.*, Feb. 1, p. 128).—A woman, aged 30, was in her fifth labour. The presentation was transverse. At 4.45 a.m. on Nov. 3 version was attempted by one practitioner under an anæsthetic. At 6 a.m. another medical man found the right arm prolapsed, and a tear in the right side of the uterus through which coils of intestine were palpable. The child's legs were free in the abdominal cavity. Version and extraction were performed without difficulty, and the placenta was removed manually. There were symptoms of severe internal hæmorrhage, the pulse being scarcely perceptible. The laceration was therefore packed with long strips of gauze, a binder was applied, and ergotin injected. The patient was then removed to hospital in an ambulance a distance of more than 3 miles.

At 9.15 the writer performed laparotomy. The gauze was not removed owing to the danger of renewed hæmorrhage, and consequently disinfection of the vagina was impossible. Through a large gaping rent, which extended from the point of

attachment of the bladder upwards and outwards to the right, and involved the whole of the anterior wall of the cervix as far as the anterior vaginal fornix, a mass of gauze of the size of a foetal head, projected into the peritoneal cavity. To this coils of small intestine were adherent. The right round ligament was torn through. The rent in the peritoneum extended through the right broad ligament to below and beyond the cæcum, which was completely separated from its attachments and floated freely about the level of the umbilicus. The bladder was totally detached from the uterus. In the peritoneal cavity was a quantity of liquid blood mixed with meconium. The ragged nature of the tear contra-indicated suture, and abdominal panhysterectomy was at once performed. After removal of the gauze-packing per vaginam a branch of the uterine artery spurted and was secured. The uterine arteries were ligatured and the ureters dissected out lest they should be involved in the rent. The ragged cervix was seized with forceps and removed from its vaginal attachments by scissors. After removal of the uterus the detached bladder and the extent of the rent were well seen. The vesical peritoneum was sutured by catgut to the anterior wall of the vagina, the peritoneum of Douglas' pouch to the posterior wall. A strip of iodoform gauze was introduced through the vagina and packed into the wide ragged cavity in the position of the right broad ligament. The peritoneum was joined over this, and the cæcum was fixed in its proper position. The peritoneal cavity was flushed with several quarts of normal saline solution, the abdominal wound was closed, and an intravenous injection of salt solution was given. For a few days urine escaped per vaginam, evidently owing to an undetected rent in the bladder, but this ceased in a fortnight and the woman went home well on the eighteenth day after the operation.

Complete rupture of the uterus is more fatal than incomplete, and if complicated by vesical lesions is the most fatal accident in midwifery. According to Klien in 15 cases there were only 2

recoveries. Putting aside cases in which laparotomy is the only treatment possible owing to the complete escape of the child into the peritoneal cavity, there are several alternatives in the treatment of ruptured uterus :

- (1) The rent may be sutured
 - (a) from the abdomen by laparotomy
 - (b) extraperitoneally
 - (c) per vaginam
- (2) The ruptured uterus may be amputated supravaginally
 - (a) with extraperitoneal treatment of the stump (Porro's operation)
 - (b) with intraperitoneal or retroperitoneal treatment of the stump
- (3) Panhysterectomy may be performed
 - (a) abdominal
 - (b) vaginal.

Suture is indicated only when the rent has clean cut unbruised edges. Complete ruptures can be sutured only abdominally. Of 149 cases of laparotomy for ruptured uterus, the child was delivered abdominally and the rent sutured in 19, with a mortality of 53 per cent; the child was delivered per vaginam and the rent afterwards sutured by laparotomy in 32 with a mortality of 47 per cent. Supravaginal amputation was performed with delivery of the child by laparotomy in 29 with a mortality of 45 per cent., after vaginal delivery in 26 with a mortality of 42. Supravaginal amputation with extraperitoneal treatment of the stump is the method most applicable to general practice. Retroperitoneal treatment requires special technical skill and is liable to cause sepsis, if as is often the case the stump is lacerated. There is no vaginal drainage and hæmatomata require to be drained through an incision in the abdominal walls. Abdominal panhysterectomy is in the writer's opinion in several respects superior to supravaginal amputation. It can be performed more rapidly, gives the best view of the relations of the wound, necessitates the removal of the useless and possibly septic cervix, and allows of thorough hæmostasis and free drainage per vaginam.

Among the 149 cases of laparotomy it was performed for complete rupture in 13, with 7 deaths. In the 7 cases in which delivery had previously been effected per vaginam 5 were fatal, of the 6 in which the child was removed abdominally only 2. Vaginal panhysterectomy for ruptured uterus was performed in 9 cases with 6 deaths. In spite of the unfavourable results the writer would employ it in cases of anterior or posterior rupture not involving the broad ligaments.

As to expectant treatment, of 198 cases, 48 per cent. ended in recovery. Of the 42 of these cases treated by drainage (drainage tube or iodoform gauze drain), 35 or 83 per cent. ended favourably. It does not follow, however, that simple drainage is necessarily the best treatment in all cases; for it has probably been adopted in the less desperate ones.

The writer gives the following rules: If there is severe hæmorrhage and the external conditions are bad, the child should be delivered per vaginam, and a drain placed in the rent; if hæmorrhage continues Porro's operation should be performed. Packing is not recommended. If the external conditions are good, as in a clinic, the child should be removed by laparotomy, and the rent sutured or abdominal panhysterectomy performed. If the hæmorrhage is moderate, delivery *per vias naturales* should be effected, and a drain of gauze or a drainage tube inserted (no packing). If there is secondary hæmorrhage abdominal panhysterectomy is indicated if the tear is lateral, vaginal panhysterectomy if the tear is anterior or posterior.

See also "REVIEW," Vol. III., pp. 161 and 511, and Vol. IV., p. 27.

Peritonitis Pseudomyxomatosa. — F. Weber (*St. Petersburg. Med. Woch.*, No. 28, 1901, p. 331).—Péan, in 1870, first described diffuse colloid disease of the peritoneum under the name of *maladie gelatineuse de peritonée*. His two patients were women with great abdominal distension.

Laparotomy was performed, and the peritoneal cavity found to be filled with a colloid substance, some of which was firmly adherent to the parietal and visceral peritoneum. The uterine appendages were said to be normal, but they were hidden by matted coils of intestine, and only a superficial examination was made. The disease was thought to be a primary colloid cancer of the peritoneum. In 1874 Beinlich described an analogous case, though in this there were multilocular colloid cysts of the ovaries. He regarded them as myxomatous rather than colloid cysts of epithelial origin, and thought that the peritoneum had undergone secondary myxomatous degeneration. The true nature of the process was decided by Werth's researches published in 1881, which have since been repeatedly confirmed.

The primary disease is always an ovarian colloid cystoma (cystoma pseudo-mucosum). One of the cysts ruptures, and the colloid material escapes into the peritoneal cavity, and sets up chronic peritonitis. Granulations sprout from the surface of the peritoneum, which in places has lost its epithelium, and the small blood vessels they contain penetrate and ramify in the colloid masses, which eventually become organised and surrounded by a capsule. In this way the colloid material is fixed to the peritoneum and the peritoneum becomes covered with cysts. The process is not unlike that concerned in the organisation of a thrombus. In advanced cases the structure of the colloid masses may greatly resemble that of a myxoma, but in more recent ones the characteristics of reactive peritonitis are easily recognisable. In long standing cases the original ruptured cyst may have become covered with adherent intestines. Occasionally the ruptured cyst is small and the large quantity of colloid material in the peritoneal cavity can only be explained on the assumption of continued secretion by the cyst wall. Sometimes the secondary cysts on the peritoneum are lined with epithelium, and cannot, therefore, arise by simple organisation of colloid material. Olshausen, Pfannenstiel, and others considered them to be

metastatic. It is now known that some of the epithelial lining of the cysts escapes along with the colloid contents. The greater part perish, but some find a suitable nidus for further development on the inflamed peritoneum; the process, therefore, is one of benign local inoculation. Günsberger has recently collected 40 cases of this disease, all in an advanced stage. The writer has seen 3 in the last 8 years, and believes them to be commoner than is usually supposed.

CASE 1.—A cachectic woman, aged 46, was admitted to hospital with œdema, dyspnoea, and a distended abdomen, which was at first thought to be due to ascites secondary to hepatic cirrhosis. It was then found that posture had scarcely any effect on the level of the fluid, and an ovarian cyst was diagnosed. When laparotomy was performed the peritoneal cavity was found full of colloid masses mostly free, but partly adherent to the peritoneum. The uterine appendages were not removed, and were very superficially examined owing to the collapsed condition of the patient. Seventeen and a half pints of colloid material were removed. Death from cardiac failure occurred 11 days later.

CASE 2.—A woman, aged 75, was admitted to hospital with great abdominal distension, œdema, cardiac weakness and irregularity, and intense dyspnoea. The abdomen was everywhere dull except just below the liver and in the lumbar regions. An exploratory puncture drew off colloid fluid. An abdominal tumour was said to have existed for 2 years, and to have rapidly increased during the last 6 months. Laparotomy showed that the abdominal cavity was full of colloid material, partly free and partly adherent to the peritoneum, which was covered with scattered thin-walled cysts. There was a cyst of the size of an apple below the liver. The omentum was thickened and crowded with tumours. Both ovaries were represented by colloid cystomata. Several of the cysts had ruptured and were adherent to the surrounding organs. Owing to the great number of secondary cysts and the omental

changes colloid cancer of the ovaries with metastatic growths in the abdominal cavity was diagnosed, and nothing beyond removal of the colloid fluid was attempted. Nevertheless there was great temporary improvement. Four weeks after the operation renewed abdominal swelling appeared and colloid fluid escaped through the umbilicus. Six weeks later this became purulent and death occurred from peritonitis. Post mortem circumscribed purulent peritonitis was found round the umbilicus. The number of cysts and nodules in the peritoneum and omentum had diminished and the process appeared to be regressive. The mesenteric and retroperitoneal glands were enlarged and contained colloid matter, and the omental thickening was due to absorption of colloid material by the lymphatics. The ovarian cysts had the structure of simple colloid cystomata, and there was no sign of malignant degeneration. The secondary cysts and the peritoneal changes were entirely due to reactive peritonitis and encapsulation as described by Werth. The colloid material contained a few epithelial cells which, except in one place, showed no tendency to proliferation. Thus in spite of a macroscopically most malignant appearance the condition was due to pseudomyxomatous peritonitis, which was regressing, although the primarily diseased ovaries were left.

CASE 3.—A woman, of middle age, entered hospital for a fairly large ovarian colloid cystoma. Laparotomy showed that one of the cysts at the upper part of the tumour had recently ruptured, and that a small quantity of colloid material had escaped. The omentum, and intestines in the neighbourhood of the rupture were dull and covered with white nodules and a thin colloid layer which was peeled off with difficulty. The ovarian tumour was removed. Microscopically the peritoneal changes were those of reactive peritonitis. Complete recovery followed.

Pseudomyxomatous peritonitis develops almost exclusively after the menopause. Its symptoms are those of a rapidly growing tumour,

which, unless colloid fluid is obtained by exploratory puncture, is usually mistaken for an ovarian cystoma or ascites. The prognosis is usually unfavourable. Of Günsburger's 40 patients only 17 recovered. In most of the cases in which laparotomy was performed death followed from cardiac failure or purulent peritonitis. The latter was possibly due to the interference with the power of absorption and destruction of organisms normally possessed by the peritoneum. The writer is convinced, however, that improved diagnosis and early operation would materially alter Günsberger's statistics, and that recovery, as in Case 3, would be the rule. It is fortunately not necessary—for it is impossible—to remove all the secondary cysts. A number of cases of permanent recovery has been reported after removal of the ovarian tumour and as much of the colloid tissue as possible. The colloid substance left behind is probably slowly absorbed. Relapses are not frequent, but if they occur a second laparotomy is necessary. Without operation pseudomyxomatous peritonitis is inevitably fatal.

Kraurosis and Rodent Ulcer of the Vulva.—Oscar Kreis (*Correspondenz-Blatt für Schweizer Ärzte*, Jan., p. 11).—The combination of kraurosis and rodent ulcer of the vulva is extremely rare. The writer has seen it in a woman, aged 42½, who was married 17 years, and had had 4 children, and one abortion. At each birth there was some tearing of the perineum. Menstruation was quite regular and lasted 8 days. For some years there was great itching

of the external genitals; and 4 years before a wart was excised from the left labium majus. Eighteen months before another warty growth appeared near the clitoris. It grew rapidly and caused burning pain and excoriation. The patient applied alum lotion, and soon after this application she noticed an ulcer forming at the base of the wart. The ulcer steadily increased in size, and simultaneously the itching became worse.

She had not diabetes. The external genitals were shrivelled and had little hair. The clitoris had completely disappeared, and the labia minora could not be made out. The entire vulvar opening was whitish and greatly narrowed. The skin was much excoriated and covered with little ulcers. On the left side near the clitoris was an uneven papilloma of the size of a hazel-nut. At its base was a large ulcer with a smooth red surface and healed edges. There was an enlarged gland in the left groin. The wart, the ulcer, and the altered skin were removed by a free incision, and the wound was closed with silk-worm gut. The enlarged gland was also removed. On microscopic examination the ulcer proved to be carcinomatous, the papilloma non-malignant, and the skin presented the features of kraurosis. The gland was also carcinomatous. The patient subsequently returned to hospital and had an enlarged gland removed from the right groin. The writer believes there is a causal connection between long-standing pruritus and kraurosis. He thinks that in cases of vulvar carcinoma the inguinal glands should be completely extirpated on both sides whether they are enlarged or not.

NOTES.

THE HEALER IN ART.—Classical antiquity, with its sunny hedonism, refused to delineate sickness plastically. But such a simple operation as the extraction of an arrow-head with a pair of pincers is extant in a mural painting in Pompeii, and the removal of a thorn from an unsandalled foot is represented in numerous statues of the later Greek period. The middle ages, with their austerer outlook upon life, delighted in the pitiable, and their representations of it range from the Crucifixion to the meanest details of suffering. Into scenes of distress it was customary to introduce some agent of healing, some saint or holy man. Thus in the famous cartoon by Raphael, now in the South Kensington Museum, Saint Peter and Saint John are represented as healing cripples in the Gate Beautiful. The rhabditic type of the patients is, from the medical point of view, interesting. The patron saint of leprosy was Saint Lazarus, and many representations of him as a leper are extant. On one of the lepers' religious banners, still preserved, he is represented as carrying the clapper wherewith the afflicted warned the world at large of their dangerous proximity. A wooden statuette of Saint Roch, the plague saint, is extremely interesting, since it shows the bubo in the groin and the swollen veins of the leg that seem always to have been symptoms of the disease. Saint Roch is actually pointing to the swelling, and has drawn back his garment to disclose it.

Early church documents are sometimes adorned with medical scenes. Thus a "pardon," issued by the Bishop of Bourges in 1510, represents a hospital, where nuns as nurses attend upon patients lying two in a bed. A fourteenth or fifteenth century fresco by Taddeo di Bartolo also represents a hospital at the hour when the medical men are visiting patients. An operation is being performed in the foreground. A large basin with a towel stands on the right, and, in the background, the ward stretches away in a long vista of partitioned recesses. The priest with the Elements is present here, as in many other such scenes. Indeed medicine remained a priestly profession until the time of the Renaissance, when, in the works of the Dutch School, it appears again to be in alliance with magic and quackery. In numerous paintings by Teniers, Gerard Dow, Jan Steen, Metz, and many others the medical man of the day is vividly, often satirically portrayed. In a series of pictures illustrating "love-sickness," now identified as chlorosis, he is shown in attendance upon pale young women. Thus in two remarkable pictures by Jan Steen he stoops, rather cringingly, to feel the pulse of recumbent ladies in characteristic Dutch interiors. Often he appears simply as a dentist, a village bleeder, a pedicure, a urinediviner, or a frank conjurer pulling imaginary stones out of a patient's head. Van Honthorst's "Dentist," with its wonderful

effects of light, is a masterpiece of realism. The old Dutch commonly regarded the doctor as little removed from a quack, but there are exceptions. In the "Anatomy-School," painted by Rembrandt in 1632, the doctor surrounded by earnest pupils appears as a teacher. The picture has a remarkable forerunner in the "Fasciculus Medicinæ," published in Venice in 1494, in which there is a vigorous full-page woodcut of a human dissection, said to be the earliest representation of the kind. In Hogarth's well-known "Consultation of Doctors" the practitioner is still a ridiculous pedant of the Dutch type. Not until quite modern times are medical scenes depicted without supernatural accessories and in a manner honourable to the profession. In 1804 Baron Gros exhibited in Paris the now famous "Pestiférés de Jaffa," of the Louvre. The picture was held to mark a revolution in colouring, and was decorated by the enthusiastic painters and public of the day, but to us it is chiefly interesting as marking a nobler attitude on the part of art towards medicine. Bonaparte is represented laying his finger on the bare bosom of a plague-stricken French soldier. A doctor, in civilian dress, is in the act of drawing the great leader's arm towards the patient's axilla where the bubo should be.

WHY MEN ENTER THE PROFESSION.—A generation ago, in 1869, Sir James Paget published an interesting essay on "What becomes of Medical Students." Of 1,000 students at St. Bartholomew's Hospital he found that 23 achieved distinguished success, 66 considerable success, 507 fair success, 124 very limited success, 56 failed entirely, 96 left the profession, 87 died within 12 years of commencing practice and 41 died during pupilage. In *The London Hospital Gazette*

of April, Dr. A. Keith has published an equally interesting essay on the supplemental subject, "The motives which induce men to adopt medicine as a profession." He finds that 100 London Hospital Students may be divided into 7 groups as follows:—(1) 7 had no choice, the profession was chosen for them; (2) 30 were born in the profession and grew up in it; (3) 10 adopted it as a boyish ideal at a very early age; (4) 12 adopted it by a process of exclusion—it was the profession they had the least objection to; (5) 7 chose it because it was the nearest akin to their favourite subject—zoology or chemistry; (6) 31 adopted it from some accidental circumstance; (7) 3 drifted into it—they could not tell why. Sir Benjamin Brodie is an example of the first group. He was sent to St. George's Hospital more than a century ago by his father, a vicar; his heart was in literature and philosophy, but by the application of a strong sense of duty medical study, at first repulsive, became tolerable, and, at last, fascinating. Of the 7 men in this group 1 has become a distinguished success; 1 will become a distinguished success; 3 will become average successes; 2 still object to medicine, and would willingly give it up. Three acquiesced passively in their father's wish, 4 objected actively. The 2 who still object belong to the latter class, but one of them at least appears likely to do well in practice. While the second group does not show a large proportion of distinguished successes it contains only a small percentage of failures. If heredity played any part the largest proportion of successes and distinguished successes should be in this group. One member of it is the sixth of a consecutive series of medical generations, and 3 belong to a third generation. Thus there is nothing approaching a medical caste in England, and inheri-

tance of distinguished professional ability is comparatively rare. Of the 10 in the third group 2 are already distinguished successes, 4 are still young, but will be, or are already, considerable successes, and in time some of them will move up to the higher table; the remaining 4 are, or will be, successes. Many men select medicine by a process of exclusion; although only 12 are included in this group there were certainly a few more in whom this factor played a minor part. Most of the men had drifted on late at school or at the university, putting off the choice of profession as long as possible. The list of names does not contain any distinguished success, but the great majority have or will enjoy more than an average amount of success; very few are failures. As a rule they turn out first-rate clinicians, and if they are not passionately fond of their profession they never envy that of another. As the natural sciences, which form the ground-work of medicine, do not offer the same certainty of a livelihood as the practice of medicine many men who have a taste for zoology or chemistry adopt medicine as a profession. Only 7 men have been included in this group, because in them this taste was the sole or principal factor in determining their choice; but there were quite as many in other groups with a predilection for natural science. Of these 7 men, 2 are distinguished successes; all the others have succeeded, above the average—perhaps less in practice and income than in reputation. Of accidental circumstances which led men into medicine Dr. Keith mentions a love of horses, companionship, and rivalry. This group of men includes, as might be expected, all sorts and conditions of medical men—the faddist pure and simple, the scientist and the able

surgeon, the happy-go-lucky and the absolutely incompetent individual. It embraces the extremes; the solid successful practitioner forms a minority in the group. The last group—that of men who cannot tell how or why they entered medicine—is small, but it shows the haphazard manner in which men set out on their course in life. The age at which men decide on medicine as a profession varies widely, Ten resolved very early, at 6 or 7; 27 at 10 to 14; 33 about 16; 17 before 20, and 13 after 20.

CHEESE POISONING.—Dr. Collingridge, Medical Officer of Health, of the City of London, has reported an extremely interesting series of cases of cheese poisoning which occurred in various parts of the Metropolis during the last 3 months of the year 1901, and was traced to one consignment of Dutch cheese. Seventeen persons were affected and the symptoms in all cases were similar. From 2 to 8 hours after eating the cheese epigastric pain, rigors, vomiting, diarrhoea, prostration, and some fever occurred. The degree of sickness did not appear to depend upon the amount eaten. The symptoms passed off in the course of 48 hours. This short incubation period suggests that the poison was present in the cheese as a product of previous changes, possibly bacterial. Similar outbreaks occurred in Michigan in 1883 and 1884. Three hundred persons were affected, and the illness was traced by Professor V. C. Vaughan to a ptomaine to which he gave the name tyro-toxicon. The cheese which caused the present outbreak was not abnormal in smell, colour, or taste. On analysis it gave figures fairly typical of Dutch cheese and yielded no mineral poison, but a small quantity of a body having the characteristics of tyro-toxicon.

LEADING ARTICLES.

LANCET, May 17, p. 1377.

The Diagnosis of Malaria.

By PATRICK MANSON, M.D., F.R.C.P., F.R.S.

The pathognomonic indications of malarial infection may be arranged under 3 headings—(1) clinical, (2) therapeutic, and (3) microscopic.

I. THE CLINICAL DIAGNOSIS.—There are many symptoms of malarial infection—fever, anæmia, icteric tinting of the skin and scleræ, enlargement of the spleen and liver, gastro-intestinal disturbance, and a tendency to spontaneous recovery and to subsequent recurrence. Any of these may lead one to suspect, but the concurrence of all of them does not justify a diagnosis of malaria. Only one symptom justifies a positive diagnosis—tertian or quartan periodicity—a rhythmical recurrence of symptoms every 48 or 72 hours. In no other morbid condition are these found. In malaria quotidian periodicity is apparently common, but only apparently. It is doubtful if true quotidian periodicity ever occurs. If it does it is very rare. The parasites of malaria are either tertian or quartan in habit, and many of the symptoms are correspondingly tertian or quartan. Multiple infection by 2 kinds of parasites or by 2 or 3 generations of one kind of parasite may give rise to double tertian or treble quartan infection with diurnal recurrence of symptoms, but this pathologically, whatever it may be clinically, is not a true quotidian periodicity. It is common in malaria but it is not pathognomonic, for a similar quotidian periodicity is common in almost all febrile complaints. Therefore it is no ground for a diagnosis of malaria. When a patient from the tropics comes with a story of evening rigor, rise of temperature to 103° or

perhaps 104° , and a profuse sweat the idea of malaria naturally presents itself. Most probably the patient says that he has malaria. And if he is anæmic and the spleen is large the diagnosis of malaria seems to be clinched. But people abroad get splenic and spleno-medullary leukæmia and other diseases in which the spleen is enlarged, and such patients often have marked quotidian fever. A condition known in Assam, where it is common and very fatal, as Kala azar, in which there is enlargement of the spleen associated with anæmia and quotidian fever, is sometimes supposed to be malarial. It also occurs in other malarious countries. The patient gives a history of malarial attacks which at first were controlled to some extent by quinine. After a time they become more frequent and less amenable to quinine. Finally, the fever resists treatment, becomes quotidian, the spleen becomes permanently enlarged, the anæmia intense, the skin sallow or even melasmic, and ultimately, in spite of treatment, the patient, if not cut off by some intercurrent disease, dies from anæmia. This disease, although possibly induced by malaria, has long ceased to be malaria—it is, in fact, a post-malarial cachexia brought about by organic changes in the blood organs and induced possibly by some additional and distinct infection attacking organs already damaged by antecedent malaria. The enlarged spleen is a bait that few resist when attempting the diagnosis of a quotidian fever in a patient from the tropics. But many people in the more malarious districts in the tropics have, though free from active malarial disease, chronically enlarged spleen, and an enlarged spleen is no protection from but is symptomatic of many febrile and other diseases. The writer has seen

ulcerative endocarditis, phthisis, and many septic conditions, in patients with spleens enlarged from antecedent malaria. If quotidian fever associated with enlargement of the spleen is to be mistrusted as a combination indicative of malaria, still more so is quotidian fever associated with enlargement of the liver. The latter combination usually means abscess of the liver. In tropical practice this disease is often in the earlier stages diagnosed as malarial fever. Syphilis, both secondary and tertiary, is not infrequently, on the strength of an associated quotidian fever and a residence or visit to a malarious country, diagnosed malaria. Septic absorption of pent-up pus is a well-recognised cause of quotidian fever not unfrequently attended with marked rigor and diaphoresis. Sometimes the most careful examination fails to determine the situation of the pus. If the patient has resided in malarious countries malaria is almost sure to be diagnosed. Pyelitis, catheter fever, pyelephlebitis, empyema, phthisis, middle-ear disease, elephantoid fever, the fever of early leprosy, the fever sometimes associated with gall-stones—these and many similar conditions, because they are accompanied by an ague-like quotidian fever and because they occur in individuals who have been abroad, are constantly diagnosed as malaria and treated as such.

2. THE THERAPEUTIC DIAGNOSIS.—Whatever may be the case in certain malignant infections in tropical countries quinine, properly given, never fails to arrest a malarial attack in this country. If a fever in this country resists 10 gr. of quinine given thrice a day for 4 days it is not malaria. In many instances quite an insignificant dose will check an ague. In double benign tertian infection it is sometimes possible by a properly timed small dose to eliminate one group of the parasites without injuring the other group

and so to convert a quotidian ague into a tertian. The dose of quinine must be absorbed. Many of the failures to control malaria by quinine are attributable to neglect of this essential. A catarrhal state of the gastric mucous membrane is usual in severe malarial attacks and is unfavourable to absorption. Persistent vomiting is also common. To get therapeutic action and diagnostic value of quinine it must then be given hypodermically or by enema. Quinine is often given in tablet or coated pill form—a most dangerous method in serious cases and a most unsatisfactory one for diagnosis. For some time quinine tablets have not possessed the flint-like hardness that used to characterise them a few years ago; they are now more soluble, but even lately the writer has twice seen them fail to be absorbed.

3. MICROSCOPIC DIAGNOSIS.—Of the 3 means of diagnosis this is the most satisfactory provided it is undertaken by one with large experience. A negative result by the amateur is valueless, a positive result is not much more to be trusted. It takes much practice to recognise all forms of the malaria parasite or to discriminate between them and vacuoles in the red corpuscles in fresh films, or dirt in dried and stained films. Therefore, for the majority of medical men, the services of an expert are necessary. But although he may not himself be able to diagnose malaria with the microscope, every medical man should know how to prepare blood films for examination. Unless the fresh blood can be examined at the bedside or within an hour or thereabouts of preparation, dried films should be made and transmitted to the laboratory for fixing, staining, and microscopic examination. The best way of preparing blood films is as follows:—An ordinary microscope slip is carefully

cleaned with alcohol. The patient's finger-tip or the lobe of his ear is similarly cleansed. The finger or the ear is pricked with a clean and rather long ordinary sewing needle. A drop of blood is pressed out and, as it may contain epithelial débris, wiped away. A second but very minute drop of the size of a large pin-head is then expressed and touched lightly (the skin must not be touched) with the clean surface of the slip about an inch from the end. Immediately the shaft of the needle is laid transversely on the droplet of blood so transferred to the slip. After waiting a second or two for the blood to run out by capillarity between the surface of the slip and the needle, the latter, held between finger and thumb, is drawn along the surface of the glass. In this way with a very little practice a beautifully fine and even film is produced. Half a dozen such films should be prepared. The single prick suffices as the films can be made very rapidly one after another. After they have dried they should either be wrapped in very clean tissue-paper or placed in a dust-free slide-box and transmitted to the laboratory. Here they are fixed with alcohol (5 or 10 minutes) and subsequently stained and examined. For purposes of diagnosis the writer uses either borax methylene blue or dilute carbol thionine. In stained films, or in fresh blood, it is practically always possible to find the parasite, at all events in those cases of malarial infection that come to England. But this only on one condition: the patient must not have taken quinine recently. Certain forms of the parasite—the crescent, for example—may be found after full dosing with quinine, but the usual fever-causing forms, as a rule, rapidly disappear after administration of the drug. Therefore, in supposed malarial fevers before preparing blood slides do not

give quinine, or suspend its use for some time.

In rare instances and at certain times in a considerable proportion of cases the parasite, or its product melanin, even in severe infections may not be detectable in the peripheral blood, and even small doses of quinine may cause its disappearance temporarily or in the case of cure for good. Even then it seems that the microscope may be relied on for diagnosis. During and for some time after malarial attacks the leucocytes are greatly diminished in proportion to the red blood corpuscles. The diminution, however, is principally in the polymorphonuclear and lymphocytes, so that there is a relative increase in the large mononuclears. Dr. Christophers and Dr. Stephens have described a method by which a fairly reliable diagnosis of actual or recent malarial infection may be made, no matter whether quinine has been administered or not. The increase in the mononuclears, they state, is principally during the apyretic intervals setting in as soon as temperature begins to fall. "An increase beyond 15 per cent. is proof of actual or recent malarial infection." Captain L. Rogers, I.M.S. (*Brit. Med. Jour.*, April 5, 1902) says: "An increase in the large mononuclears to about 12 per cent. and upwards, especially during the remissions of the temperature, strongly indicates malaria." Dr. C. W. Daniels writes: "In all forms of malaria after and to a smaller extent during the fever the large mononuclear leucocytes are relatively increased to the other leucocytes. This increase may be slight and in certain cases has been so slight that they only formed 15 per cent. of the leucocytes. Commonly after malaria they vary from 25 to 30 per cent. and occasionally are over 40

per cent. The increase is maintained for a period varying in different cases from 2 to 3 weeks to at least as many months, and slowly diminishes. It is not affected by quinine either in large or frequently repeated doses. With some exceptions it affords a satisfactory proof of the probable recent presence of parasites. In normal blood it is rare to find more than 12 per cent. In typhoid and Malta fever the writer has seen a similar increase, but it is exceptional. In certain diseases, particularly scurvy, there is also a marked increase but in this disease there is also leucocytosis and a more marked increase in the lymphocytes. The absence of this variation is of more value as a diagnostic point than its presence. The only exceptions the writer has seen were cases in which an inter-current disease, such as pneumonia, which is associated with increase in the polymorphonuclear elements, also occurred. In other cases this method has shown itself to be reliable for the exclusion of recent malaria. It has proved of value in differentiating yellow fever from malaria and in differentiating the hyper-pyrexial fever of West Africa from malaria. Though not of the same value as the presence of parasites or of pigmented leucocytes or recent pigment in the organs it is of much higher value as a test of recent malaria than splenic tenderness or enlargement and is of particular importance when, either in the natural course of events or after the administration of quinine, there are no characteristic symptoms. The main objection to the method is the difficulty sometimes experienced in differentiating large mononuclears from lymphocytes. After practice this difficulty is small.

Sometimes assistance in diagnosis is given by considerations of time and locality. It is commonly believed that a malarial infec-

tion may last a life-time. Thus the old Anglo-Indian, many years after he has come home for good, may say that he has recurrences of malarial fever contracted in youth. Dr. Manson does not believe in the malarial nature of such attacks. He has never been able to find the parasite in such a case. He believes that malarial infection does not persist after 3 years from the date of invasion. But more observations are wanted. In his experience a malignant tertian tends to die out in from 18 months to 2 years, a benign tertian in from 2 to 2½ years, and a quartan in about 3 years. Protozoal organisms having asexual and sexual phases require resuscitation by passing through the sexual phase every now and again; otherwise they become extinct. This appears to be true of the malarial parasite. Dr. Manson is inclined to regard any fever which occurs 3 or more years after the patient has been away from any place where malarious infection is possible as non-malarial. If a patient has never been to a malarious country he cannot get malaria unless by artificial or abnormal means. In the malarious belt there are many non-malarious places—Malta, for example. A chronic or recurring fever in a person from Malta who has not visited a malarial place is probably Malta fever or enteric fever, certainly not malaria. Similarly, Barbados is not malarial. Therefore a chronic or recurring fever in a patient from Barbados who has never visited a malarious place cannot be malarial—most probably it is symptomatic of some of the lesions in filariasis so common in Barbados. Because such fevers are ushered in by severe rigor these filarial fevers are locally known as “ague.” Dr. Manson has a good many reputedly malarial patients from the fen districts and other

formerly malarious spots in England. Not one has turned out to be malarial. They were assumed to be malarial because there was some periodicity in the fever, perhaps enlarged spleen, and because they came from localities which were formerly malarious. Dr. Manson has never seen a case of indigenous English malaria, he believes the plasmodium, like the wolf and the wild boar, has died out in England.

Thorough and intelligent application of one or all of these methods: the clinical—tertian and quartan periodicity; the therapeutic—the curative effect of quinine; and the microscopic—the detection of the parasite or its products in the blood and the characteristic leucocytic variation, seldom, it ever, fail to lead to a correct diagnosis. But the presence of malaria does not exclude other diseases. On the contrary, malaria often predisposes to them. Similarly, the explosion of a latent malaria is favoured by other infections, especially typhoid fever and tuberculosis.

BRIT. MED. JOUR., June 14, p. 1470.

Hereditary Angio-neurotic Œdema: Death from Laryngeal Obstruction.

By T. WARDROP GRIFFITH, M.D., M.R.C.P.

A girl, aged 18, was admitted to hospital on June 21, 1886, with great œdema of the right arm and hand and dyspnoea. The voice was husky and she had some pain on swallowing. The tongue was coated, but the general health was good and there was no albuminuria. There was such great œdema of the epiglottis and aryteno-epiglottidean folds as almost entirely to conceal the vocal cords. The question of tracheotomy was considered, as was also that of scarification of the

swollen mucosa, but it was deemed safe to wait. By the evening the œdema had entirely disappeared from the larynx. The swelling of the arm rapidly subsided. She was discharged well at the end of 5 days.

Since infancy she had been subject to localized swellings on various parts of the surface of the body. Thus shortly after birth one arm swelled to such an extent that the clothing was cut to release it. She used often to notice a small rounded swelling like a marble under the skin, which would enlarge and become diffuse so that, for instance, the back of the hand, would swell enormously, and swellings more or less diffused or localized used to develop with great rapidity on the hands, feet, shoulders, chest, or around the vulva. Sometimes these were attended with slight redness and tickling, and when the vulva was affected micturition was painful but not difficult. For many years she had been subject to what she termed bilious attacks.

Her father from earliest infancy had swellings of the same kind. On three occasions these seem to have affected his throat. The first attack occurred at the age of 21, the second a few years subsequently, and the third proved fatal at the age of 29. He came home from work saying that his throat was getting swollen. His medical man was sent for and went to get something for his relief, but during his absence the patient suddenly became blue in the face and died asphyxiated.

From 1886 the patient was frequently seen at intervals until her death recently. The swellings were diffuse or circumscribed. Usually pale, but sometimes slightly pink, they did not pit on pressure. On two

occasions the symptoms were rather alarming. In July, 1890, she struck her head against the lock of a door, which made her feel sick and caused a small lump on the forehead. Next day the swelling had passed down, affecting the eyelids and the face, and on the following morning, when the swelling of the face was beginning to subside, the throat became slightly affected, and felt as if something were sticking in it.

One day, in Oct., 1891, she complained of toothache with swelling of the same side of the face. During the night, and especially during the following day, the swelling rapidly increased, then the voice became affected. At 11 o'clock at night she was sitting up, in which position the dyspnœa was less urgent, with the face swollen beyond recognition, and presenting the aspect of acute renal dropsy. The œdema was practically confined to the face and under aspect of the chin; it was firm, did not pit readily on pressure, and somewhat resembled that of myxœdema, though it was more pronounced. The tongue was swollen, as was also the mucous membrane of the mouth, and the lips were so swollen that the mouth remained slightly open, and the continual escape of the buccal secretion necessitated constant mopping of the mouth. The larynx was readily examined, but all that could be seen were 3 rounded masses, pale, jelly-like, and tense, representing the swollen mucous membrane covering the epiglottis and the 2 arytenoid cartilages. The false and true cords were completely concealed. The voice was not much affected. Next day she was much better, the voice was clear and the swelling of the face was subsiding. She was married 6 or 7 years ago, and had 3 children. Pregnancy had no influence on the swellings.

She was fully alive to the danger of swelling in the throat, and the final scene justified her apprehensions. On Feb. 20, 1902, at 10.30 a.m., the throat felt swollen. At noon she was sitting on the floor to all appearance comfortable and free from dyspnœa, and was amusing her child. Suddenly she started up, apparently tried to speak, clutched at her neck, became blue in the face, and died. When the writer saw her, after about half-an-hour, the features were livid, the tongue was slightly protruded between the teeth, and there was fulness of the neck. Her mother said that she had died in exactly the same way as her father.

NECROPSY.—The mucous membrane of the larynx was very œdematous, tense, and pale, and the sides of the laryngeal cavity were in contact a little below its superior aperture, and remained so until just below the level of the true cords. A series of transverse sections of the larynx showed that the œdema affected not only the mucous membrane but the deeper connective tissue, and even the substance of the muscles. The œdematous fluid was purely serous, and, contrary to what is usually stated to occur in œdema of the larynx, the tissue covering the true vocal cords was decidedly affected.

Osler in 1888 emphasized the association of angio-neurotic œdema with symptoms of gastro-intestinal irritation. The influence of heredity has been pointed out by Quincke, Strübing, and Falcone. Osler traced the disease through 5 generations in one family, no fewer than 22 members being affected. Of these 1, if not 2, died of œdema of the larynx.

Attention was first called to this affection in 1882 by Quincke who gave it the name of acute circumscribed œdema of the skin. Cases had indeed been formerly described by Sir Thomas Watson, and under the name of fugitive œdema by Laycock, but to Quincke

is due the credit of suggesting that the œdema depends upon altered innervation of the part. The terms "massive" urticaria (Rapin) or "giant urticaria" (Milton) have also been used. The influence of the nervous system on the production and determination of the situation of dropsy is important. Injury to nerve trunks and cervico-brachial neuralgia have resulted in œdema. Gowers notes the association of trigeminal neuralgia with venous distension on the same side, and with œdema of the scalp. Charcot called attention to the association of œdema with hysterical palsy of a limb, the œdema vanishing with the return of power. The rapid effusion into the joints in tabetic arthropathy is a good example of dropsy due to nervous influence, and especially interesting in this connexion, for in one of Quincke's cases of circumscribed cutaneous œdema repeated effusions occurred into the joints. Leyden has described œdema in spinal myelitis, while in alcoholic paralysis it is familiar in the acute stage.

See also "REVIEW," p. 334.

JOUR. OF AMERICAN MED. ASSOC.,
April 12, p. 911.

Therapeutics of the X Rays.

By W. A. PUSEY, A.M., M.D.

LUPUS.—In lupus the writer finds that the application of the X rays causes the disease to disappear without destroying any healthy tissue and yields white, soft, pliable scars which could not be less extensive under any other method of treatment. In the case in which the longest interval—18 months—has elapsed since recovery there is no sign of recurrence.

See also "REVIEW," Vol. IV., p. 62.

RODENT ULCER.—In 8 consecutive cases the ulcer healed and was replaced by healthy scar. The following case "was beyond relief

by any other method." The patient was a man, aged 35. Eleven years before a small nodule appeared on the right cheek below the eye. It gradually enlarged and after 2 years it ulcerated. Five years later a radical operation was performed; the ulcer and much of the surrounding tissue were removed. The lower eyelid was restored by an extensive plastic operation. After a year recurrence took place and the orbit became involved. The disease was so extensive that a surgeon refused to operate.

The entire orbit, both eyelids, the side of the nose and the cheek were involved (Fig. 1). The eyeball, which was shrunken and retracted, was removed but the pain was not relieved. Exposures to the X rays were given almost daily until erythema and slight desquamation were produced. Within a week the pain ceased and the discharge diminished. The borders and the nodules shrank and the ulcer began to heal. The surrounding tissue became smooth, soft, movable, and free from induration. After 3 months the ulcer was almost healed and the patient had regained health (Fig. 2). Sections of the border of the ulcer made before and after the exposures demonstrated the effect of the treatment: the abundant downgrowth of epithelium was replaced by a degenerated, structureless, wavy substance.

See also "REVIEW," Vol. IV., p. 620.

RECURRENT CANCER OF THE BREAST.—A woman, aged 48, was seen on July 18, 1901. In 1899 a cancer developed in the right breast, which was removed in April, 1900. Recurrence was evident in the scar 6 months later. In the spring of 1901 the case was pronounced inoperable.

The skin and subcutaneous tissue for an area 6 inches in diameter around the centre of the scar was dense, hard, waxy-looking and



FIG. 1.



FIG. 2.



FIG. 3.

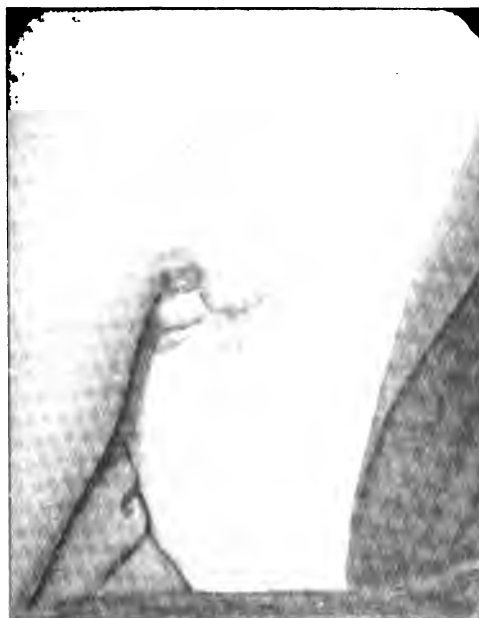


FIG. 4.

infiltrated with carcinoma (Fig. 3). In and around the centre of the scar was a group of waxy-looking nodules mostly denuded of epidermis and at points ulcerating. The arm was greatly swollen and tensely oedematous.

Daily exposures to the X rays were begun on July 18, 1901. By Aug. 15 marked dermatitis had been produced over the entire exposed area, and a bulla had formed over the centre of the tumour. The treatment was as vigorous as the writer dared to adopt because it seemed if anything was to be done it should be done quickly. This effect disappeared by Sept. 2, when the entire surface was covered with epidermis. At the same time the nodules had markedly shrunk and the oedema of the arm entirely disappeared. With the exception of an interval of 6 weeks, when she was ill, the patient was treated regularly. Acute dermatitis was again set up in the latter part of Oct., but since then the exposures have not been carried to this point. On Nov. 8 the dermatitis had entirely disappeared and the skin was of normal colour except for some pigmentation around the periphery of the exposed area. The tissue in the position of the tumour was smooth and showed no evidence of carcinoma (Fig. 4). All the nodules had entirely disappeared.

A woman, aged 58, was seen in Nov., 1901. The left breast axillary and supra-clavicular glands had been removed for cancer in July, 1900. A few months later the disease recurred and was pronounced inoperable. Alarming hæmorrhage had occurred twice. Fig. 5 shows the condition on Nov. 1, 1901. There was a mass of cancer involving an area of about a square foot. The nodules varied in size



FIG. 5.



FIG. 6.

from that of a hazel-nut to that of a small apple. At the upper inner angle there were a couple of ulcers $2\frac{1}{2}$ to 3 in. in diameter. Around the main mass were numerous nodules of the size of a hazel-nut. No enlarged glands were evident. She was suffering much pain and was so weak that a nurse had to bring her by easy stages for treatment.

X ray exposures were begun on Nov. 1 and for 2 months were given daily, after that every other day or less frequently. Two weeks after the treatment was begun the pain permanently disappeared. On Jan. 17 the following note was made: "There has been rapid subsidence of the tumour going on for the last month. The improvement can be seen from week to week. There is at present only a slight superficial ulceration at one point about the size of a dime and one small nodule of the size of a pea. The surface is free from infiltration and thickening and the redness has almost disappeared. The skin is considerably pigmented." Improvement has continued since that time. The condition at the present (Feb. 20, 1902) is shown in Fig. 6. There is a thin, soft, brownish-white scar, which is almost freely movable, and there is no evidence of carcinoma. Around the borders of the scar are numerous dilated capillaries, the remnants of the previous abundant blood supply of the tumour. The general condition has equally improved. Since Jan. 1 she has been strong enough to come alone for treatment thrice a week from a town 35 miles distant. She has regained appetite and has increased in weight 10 to 15 lb. Now she presents the picture of health.

See also "REVIEW," Vol. IV., p. 558.

DEEP SEATED CARCINOMATA OF THE HEAD AND NECK.—The writer relates several cases in which the growths diminished under the application of the X rays, but only temporarily.

SARCOMA.—A man, aged 24, was seen on Sept. 2, 1901. In Feb. he noticed a hard swelling below the angle of the jaw on the left side of the neck which gradually increased. In May he noticed a similar hard swelling on the right side of the neck which rapidly increased. In Aug. there were large immovable diffuse swellings on either side



FIG. 7.

of the neck, of the size of a man's fist. The tumour on the left side of the neck was removed. A section showed small round-cells, somewhat larger than red blood corpuscles, densely packed together, and traversed by blood channels without walls and almost entire absence of stroma.

There was a healthy scar on the left side of the neck and a large swelling on the right side (Fig. 7). The swelling was hard, diffuse, and immovable, and the neck was almost rigid from interference with motion. Under a month's exposures to the X rays the swelling entirely disappeared. The result is shown in Fig. 8. The man gained 12 lb.



FIG. 8.

in weight and on Nov. 1 went back to work. There was no evidence of recurrence up to March 1 but on March 10 some swelling was returning. At the time of writing he had not been able to return for further treatment.

LYMPHADENOMA.—A boy, aged 4, was seen in May, 1901. In Dec., 1900, small hard

swellings were noticed below each ear. The submaxillary, cervical, and supraclavicular glands were enlarged, hard, and discrete. There were tense swellings both anteriorly and posteriorly in the neck, especially on the left side. Blood examination showed 4,200,000 erythrocytes, 10,000 leucocytes and hemoglobin 50 per cent. Two glands were dissected out. They showed no evidence of tuberculosis but presented the appearances of a lymphadenoma. In Aug., 1901, there were a large irregular swelling on the right side of the neck of the size of a small fist, extending from below and behind the right ear to the clavicle, and numerous hard masses varying in size from that of a filbert to that of a walnut. On the left side the neck was a swelling about half the size of that on the right. The swellings were freely movable. A large mass of glands on the right side of the neck was dissected out.

On Sept. 11 the condition was as is shown in Fig. 9. There were a healthy scar on the right side of the neck and on the left side a swelling of the size of a fist, made up of a group of greatly enlarged glands. These were exposed to the rays on Sept. 11. In the course of a month erythema was produced and the glands rapidly diminished. After 2 months 3 or 4 small glands remained on this side of the neck. They were quite soft and not larger than a filbert. Almost all the swelling had disappeared and the little that remained was as soft as adipose tissue. The case has been under desultory treatment from that time to this without change. Fig. 10 shows the condition on Nov. 1, 1901. The general physical and mental condition had greatly improved. The number of red and white corpuscles was about the same as when the blood was examined in May last; but there was 80 per cent. of hæmoglobin against 50 per cent. then.



FIG. 9.



FIG. 10.

The X rays have a destructive effect upon tissues of low vitality, which can be utilised without destroying the involved healthy tissue. The writer's sections show degeneration of carcinomatous tissue and disappearance of the degenerated substance, which is followed by the formation of firm healthy scar tissue. A similar process presumably occurs in the disappearance of the disease in tuberculosis, sarcoma, and lymphadenoma. The advantages of the X ray treatment are as follows :— (1) It is painless; (2) it destroys diseased tissue but leaves healthy tissue in its place; (3) it leaves small scars; (4) it can be used when the surrounding healthy tissue cannot be sacrificed (in operations about the eye and nose); (5) it is applicable in inoperable cases; and (6) it often relieves pain. The writer does not advise the use of the X rays for operable malignant growths except rodent ulcer. He thinks that the X rays should be used as a prophylactic measure in all cases of malignant disease which have been operated upon, and should be tried in all inoperable cases—in which there are a probability of relieving pain and a possibility of inhibiting growth.

BERLIN. KLIN. WOCH., Feb. 10, p. 113, Feb. 24, p. 166, and Mar. 3, p. 190.

Acute Syphilitic Nephritis.

By Dr. ERICH HOFFMANN and Prof. SALKOWSKI.

Acute nephritis is a rare lesion of early syphilis. Karvonen, in 1900, failed to collect more than 20 undoubted cases. In 72 others reported as syphilitic the diagnosis of syphilis was uncertain, or other possible etiological factors such as alcohol, cold, or mercurial intoxication, were not excluded. Welanders,

who for years has examined the urine in every case of syphilis under his care, has never seen an undoubted case of acute syphilitic nephritis. It would be remarkable, however, if the kidneys, alone of all the organs, were never affected by a general infection such as syphilis. A few published cases establish the fact indisputably that acute nephritis, with great albuminuria, for which no other cause than syphilis can be discovered and which disappears under mercurial treatment, may occur in a previously healthy subject during the early secondary stage. Varicella is another infection in which acute nephritis rarely occurs. (See "REVIEW," p. 339).

A man, aged 23, noticed a sore on the prepuce on July 13, 1901. This became a typical hard chancre and the inguinal glands enlarged. A general eruption followed early in Aug. In the middle of Aug. he became pale and languid and suffered from occipital headache. The urine was dark and scanty, though usually clear and abundant. Chill was improbable as great pains had been taken to guard against it. On Sept. 4 he entered hospital covered with a polymorphous syphilitic eruption. Though of poor physique he had had no previous illnesses except scarlet fever at the age of 5. The mucous membranes were pale. The heart and lungs were normal, the pulse was of medium tension, somewhat frequent, and fairly regular. The liver and spleen were not enlarged. There was no œdema. The urine was scanty (200 c.c. per diem), dark brown, acid, and of s.g. 1.057; it solidified on boiling so that the test tube could be inverted without the escape of a drop. It contained 7 per cent. of albumin, hyaline casts, and a few leucocytes, red corpuscles, and renal epithelial cells. With the exception of a single intra-muscular injection of mercury on Sept. 2 the syphilis had not been treated.

On Sept. 5 a diet consisting chiefly of milk with soup, vegetables, and potatoes, but no meat, and daily inunctions of 2.5 gm. of mercurial ointment were ordered. On Sept. 6 the urine was examined by Prof. Salkowski. It contained 8.5 per cent. of albumin but no nucleo-albumin or albumose. On Sept. 8 the eruption was fading and the mucous patches had begun to heal. The daily amount of urine had risen to 350 c.c., the s.g. had fallen to 1.039, and the percentage of albumin to 3. On Sept. 9 the amount of albumin was only $\frac{1}{2}$ per cent., on Sept. 10, $\frac{1}{3}$ per cent. with a s.g. of 1.017, and on Sept. 11, $\frac{1}{5}$ per mille with a s.g. of 1.007. On Sept. 15 the albumin fell to 1 per mille and meat was added to the diet; on Sept. 16 it was only $\frac{1}{4}$ per mille, and the amount of mercurial ointment to be rubbed in daily was increased to 5 gm. On Sept. 19 there was only a trace of albumin, and on Sept. 20 there was none. The s.g. was 1.012 to 1.017 and the daily amount 1,750 to 2,000 c.c. On Sept. 23 the syphilitic symptoms had disappeared except for slight adenitis, some alopecia, and pigmentation in the former position of condylomata. On Oct. 11 the patient drank 2 glasses of beer and a trace of albumin temporarily reappeared in the urine. Thereafter albumin could not be detected and the casts and other abnormal constituents disappeared. In all there had been 10 inunctions of 2.5 gm. of Ungt. cinereum, which contains 30 per cent. of mercury (Ungt. hydrargyri B.P. contains 50 per cent.), and 20 inunctions of 5 gm.

According to Justus and Welanders the following circumstances alone justify the diagnosis of syphilitic nephritis: (1) The kidneys must be known to be healthy before the contraction of syphilis. (2) The severity of the renal symptoms must run parallel to

the other symptoms of syphilis. (3) The albuminuria must improve or disappear under mercurial treatment. This case satisfies the 2 latter conditions. As regards the first, there had been no renal symptoms until the middle of Aug. when the patient noticed a change in the appearance of the urine. It is extremely improbable, therefore, that nephritis preceded the syphilis, and the results of treatment are practically conclusive. On Dec. 17, 1900, there was a slight relapse of the syphilitic eruption with headache. The urine contained 0.5 per mille of albumin and a few hyaline casts. Iodide of potassium and an injection of salicylate of mercury were given and on Dec. 23 the roseola had faded and the albuminuria disappeared. The patient then abandoned the treatment and on Jan. 26, 1901, the condition of the urine and of the eruption resembled that of Dec. 17. Thus with a return of the syphilitic eruption there was a slight relapse of the nephritis.

In most of the undoubted cases of acute syphilitic nephritis the albuminuria appeared early in the disease, occasionally with the eruption. The symptoms of syphilitic nephritis vary greatly. French writers mostly describe as characteristic a sudden onset with rapidly increasing anasarca and early uræmia. Others emphasise, probably with greater reason, the insidious and easily overlooked nature of the disease. But the symptoms of syphilis are characteristically variable, and syphilitic nephritis is no exception. The lesions in syphilitic nephritis also vary. In this case the chief changes were probably in the renal vessels, especially those of the glomeruli, which became permeable to albumin, since the scantiness of red corpuscles negatived hæmorrhagic nephritis, and the scantiness of casts and absence of nucleo-albumin negatived parenchymatous

nephritis. The percentage of albumin (8.5) approached that of the blood, and a quantity of casts and cellular elements might have been expected. The sediment was, on the contrary, unusually scanty. On standing for several days at a low temperature the urine spontaneously deposited a copious precipitate of white amorphous albumin, which from its reactions was intermediate between globulin and albuminate. On standing for 20 hours in a very weak solution of caustic soda it was completely re-dissolved and converted for the most part into true soluble—not alkaline—albumin. There were also traces of albumoses and perhaps of peptone. The few cases of syphilitic nephritis, in which a necropsy has been possible have constantly shown interstitial inflammation. In one case there were large white kidneys, and in another cloudy swelling and fatty degeneration of the cortical epithelium with glomerulitis. In every case of syphilis the urine should be examined before treatment is begun. There is often no œdema, and if examination of the urine is postponed it may be impossible to tell on subsequent discovery of albuminuria whether it is syphilitic or mercurial—a vital distinction as regards treatment. The prognosis of syphilitic nephritis is probably more favourable than that of other varieties, since it is amenable to specific treatment. Karvonen reports several cases in which the cure was complete, and there had been no relapse 8 to 13 years later. In one of his cases the nephritis became chronic, and in 3 it ended fatally.

In a case published by Descourt (*Thèse de Paris*, 1878) the percentage of albumin exceeded that in the writer's. A man, aged 27, acquired severe syphilis on April 20. On June 13, 20 days after the appearance of

the eruption, albuminuria appeared. The s.g. was 1,060, and the percentage of albumin 13.7. Under mercurial inunctions the albumin completely disappeared in a fortnight.

LANCET, May 24, p. 1447.

Acute Pleurisy with Effusion.

By GEORGE R. MURRAY, M.A., M.D., F.R.C.P.

Formerly attacks of acute pleurisy with effusion were attributed to the action of cold; but cold in the great majority of cases, as in pneumonia, can only be a predisposing factor. Evidence is steadily accumulating which shows that many cases are the result of primary or secondary infection of the pleura by a microbe. But it should not be concluded that all cases are due to infection. The following observations appear to show that cold alone may cause pleurisy. Dieulafoy quotes an observation made by Lemarre at Saint-Germain (*Semaine Méd.*, Nov. 20, 1901). A high wall which was situated midway between the forage-store and the barracks was lowered to the height of one metre. Soldiers carrying bundles of hay or straw began to rest on this wall. They were hot and perspiring, and their right sides were exposed to the north-east wind which was often very cold. An outbreak of right-sided pleurisy occurred among these men. The soldiers were forbidden to rest at this point and no more cases occurred. This experience was repeated several times by the succeeding regiments which occupied the barracks. In all 50 cases of pleurisy occurred, all of which ended in recovery. In animals pleurisy may be due to cold. Outbreaks have been recorded in recently clipped horses kept in the open all night. Duvieusart observed 100 cases

of pleurisy, 60 of which were fatal, in a flock of 400 sheep which had been shorn during a very cold Feb. None of these animals were tuberculous and the effusion did not infect guinea-pigs.

In acute pleurisy with effusion it is by no means easy to determine the nature of the infection. The great majority of cases are tuberculous, rheumatic, or pneumococcal. The most important of these is acute tuberculous pleurisy, which may occur in an apparently healthy subject. It is not easy to demonstrate the bacilli in the effusion, as they are scanty and may be absent from the specimen examined. Ehrlich found the bacillus by microscopic examination in only 2 out of 9 clearly tuberculous cases. Cultures also are often negative. Lemoine made cultures from 38 cases. In 28 the tubes remained sterile and yet 15 of these ultimately turned out to be tuberculous. As other bacteria generally develop in cultures prepared from non-tuberculous cases the absence of growth in a tube inoculated from an acute effusion is regarded by many as presumptive evidence of its tuberculous origin. The most trustworthy method of determining the presence of the tubercle bacillus is by inoculating a guinea-pig with the fluid obtained by aspiration. If the animal develops tuberculosis the patient is suffering from pleural tuberculosis. Netter made inoculations with exudation from 3 different classes of cases. In 16 cases known to be tuberculous 8 positive results were obtained. Of 25 cases attributed to cold tuberculosis developed in the inoculated animals in 10. In 14 cases in which the pleurisy was evidently due to some other cause all the inoculations were negative. In the German Government report on the efficiency of tuberculin it is stated that 15 cases of pleurisy were tested with tuberculin and both

a general and a local reaction followed in 13 (87 per cent.).

There is, moreover, strong clinical evidence of the tuberculous origin of pleurisy with effusion. The previous history of a case, as a rule, helps but little but the after-history is often most instructive. A patient who has had pleurisy with effusion not infrequently develops tuberculosis, generally of the lung, later. Dr. A. G. Barrs, in 1890, ascertained that 21 out of 57 patients treated for pleurisy with effusion at the Leeds Infirmary during the years 1880-84 had died from tuberculosis. Post-mortem evidence also points to the same conclusion. Kelsh and Vailard examined 16 fatal cases of pleurisy in the majority of which the effusion was serous. The subjects were in good health before the attack which had generally been attributed to cold and died during apparent convalescence. In every case miliary tubercles were found on the pleura. Probably fully one-half of all cases of pleurisy with effusion is due to infection of the pleura by the tubercle bacillus.

Infection with the pneumococcus usually causes purulent effusion, as when lobar pneumonia is followed by empyema. A serous effusion may occur with or after croupous pneumonia. Further, pneumococcic pleurisy with effusion may occur without pneumonia. The following case is an example:—

A woman, aged 33, was being treated for inoperable recurrent carcinoma of the right breast by Dr. Beatson's method. Oophorectomy was performed on March 6, 1901. On March 25 the temperature rose in the evening to 100° , and the next evening to 103.4° . Two days later she complained of severe pain in the right chest, which came on suddenly and was increased by deep inspiration. Two days after this the apex beat was displaced outwards to the left nipple line and there were signs of effusion

in the right chest as high as the fifth rib in the right nipple line in front, and the angle of the scapula behind. On April 1 the apex beat was in the fourth left intercostal space just outside the nipple line and the dulness extended up to the fourth rib in the nipple line. Exploratory puncture yielded clear serous fluid from which the pneumococcus was obtained in pure culture. The temperature was not normal until April 12. The physical signs gradually diminished but on the last examination (on May 10) the apex beat was internal to the left nipple line, the vocal fremitus was still slightly diminished at the right base and there was dulness for 3 finger-breadths.

It has been shown by Dr. J. W. Washbourn that the constitutional symptoms of primary infection of the pleura by the pneumococcus may be the same as those of lobar pneumonia, for which they are apt to be mistaken. Thus, in one of his cases there were herpes, high temperature, delirium, cough, and rapid breathing. At the necropsy the lung was found to be unaffected while the right pleural cavity contained 54 ounces of pus in which the pneumococcus was found. The occurrence of acute primary empyema with such symptoms shows the importance of exploratory punctures of the chest when the physical signs are not conclusive. Other bacteria which have been found in serous pleural effusions are the typhoid bacillus ("REVIEW," Vol. III., p. 217), the streptococcus pyogenes, and the staphylococcus pyogenes, though when the two latter organisms are present the effusion is usually, but not always, purulent.

It is important to ascertain the cause of serous effusions. In some cases there may be a history of obstinate bronchitis, slight hæmoptysis, fistula in ano, enlargement

of the cervical glands in childhood, or possibly disease of the hip-joint. The actual attack may have been preceded by vague ill-health, some loss of strength, and decrease in weight. Any of these would indicate that the pleurisy was probably tuberculous. Cultures prepared from the fluid drawn off in a sterilised syringe will show if the effusion is caused by the pneumococcus, streptococcus pyogenes, or staphylococcus aureus. The tubercle bacillus takes long to grow, so that absence of growth at the end of 48 hours is in favour of tuberculosis.

In a tuberculous pleurisy the effusion will probably be absorbed, though paracentesis may be required once or oftener. If the effusion is due to the pneumococcus the prognosis is favourable and the duration of the attack will probably be from 1 to 3 weeks. The fluid may be entirely absorbed or if paracentesis is required it will be only once. If the streptococcus is found the attack will probably be acute and severe. The fluid, serous at first, soon becomes turbid and later often purulent. The duration of the attack may be long, extending to several months. The fluid soon accumulates again after aspiration, so that incision and drainage are usually required as for empyema.

In empyemata bacteria are commonly present. In old empyemata, however, bacteria may die and the pus become sterile. Mr. Bilton Pollard has recently pointed out that the course of an empyema varies according to the microbe present and that a bacteriological examination of the pus is useful in prognosis. He found that pneumococcic empyema runs the most favourable course. It occurs most frequently in children in whom empyemata are generally benign. Staphylococcic empyemata begin more insidiously and run a less acute course, while streptococcic empyemata

develop rapidly, run an acute course, and are accompanied by severe toxic symptoms. Mr. Pollard considers that any pleural effusion, even if only slightly turbid, which contains streptococci, should be regarded as an empyema and treated as such.

Valuable information is obtained by the use of an exploring syringe. The ordinary hypodermic syringe which is sometimes employed, is unsuitable owing to its small capacity, and the very small bore of the needle. The ordinary exploring syringe which holds one drachm is the most convenient. The needle should be not less than 3 in. long and should have an internal diameter of not less than $\frac{1}{8}$ in. See that the needle is strong and has no flaw in it. When fixed to the syringe held in the hand it should be capable of bearing a lateral strain of 1 lb. in any direction near the point. Syringes for the injection of antitoxin should never be used as the needle may snap off short. The needle must always be sterilised just before use. The disinfection of the skin is also important. It should be well washed with soap and water and then scrubbed with cotton-wool soaked in 1 in 20 carbolic lotion. The needle should be just pushed through the parietal pleura at first and the handle of the syringe withdrawn about one-third of its length. If no fluid appears in the syringe push the needle in another third, withdraw the handle another third, and if still there is no fluid push it in as far as it will go and draw out the plunger to the full limit. If, instead of doing this, the needle is pushed right in at first it may pass through and beyond a layer of fluid and miss it altogether. The following case is an example.

A man, aged 29, had signs of pleural effusion below the level of the angle of the left scapula behind. The heart's apex beat was midway between the nipple line and the

sternum. The dull area was explored with a needle but no fluid was obtained. The dullness increased upwards to the middle of the scapula and the patient became cyanosed. The chest was again explored and some clear serous fluid was obtained. The conclusion drawn was that there was serous pleural effusion and not an empyema, as had been suspected. Three days later he expectorated 14 ounces of foul pus which contained an enormous number of microbes, streptococci and pneumococci among them. Two days later the chest was again explored just below the angle of the left scapula and pus was withdrawn. The pleura was opened and drained but the patient died the following day. At the necropsy, in addition to the empyema which had partly discharged through the lung, the posterior part of the pericardium was found distended with 5 or 6 ounces of clear serous fluid, so that there was only about one inch of compressed lung between it and the chest-wall, the two layers of pleura at that point being separated by only a thin layer of pus. Thus in exploring the chest the needle had evidently passed through the empyema into the distended pericardium, from which the serous fluid had been withdrawn. If the needle had been thrust just through the chest-wall at first the pus would have been tapped and the mistake avoided.

If no fluid appears in the barrel of the syringe the needle should be withdrawn and the contents of the needle itself driven out on to a glass slide. It should be noted if any smell can be detected and the fluid thus obtained should be examined under the microscope. In some cases of empyema the pus may be viscid and will not flow through the needle. In such cases the microscopic examination of the contents of the needle will often reveal pus. In making the puncture

it is important to note the resistance offered to the entrance of the needle and also to move it about somewhat so as to ascertain if the end is free in a cavity filled with fluid or has penetrated a solid. In this way the presence of a thickened pleura or a fibroid lung may sometimes be ascertained.

CORR.-BL. F. SCHWEIZ, AERTEZ, April 15,
p. 232.

Symptoms of Acute Gout from deposit of Phosphates and Carbonates.

By Dr. H. WILDBOLZ.

A woman, aged 57, had for 6 or 7 years noticed that her hands frequently were diffusely red and swollen. The redness, swelling, and tenderness of the fingers which were more intense in the terminal phalanges, subsided in the course of a few days, but eventually left behind irregular thickenings and nodosities on the palmar surfaces. At first these were in the intervals covered with normal skin, later the redness and tenderness became permanent. Still later these inflamed areas ulcerated and gave exit to a granular, pultaceous, yellowish-white material, which rapidly solidified on exposure to air and frequently contained chalky concretions. It was composed chiefly of phosphates and carbonates with a trace of organic matter but no uric acid. This process was followed by immediate improvement in the inflammation of the affected fingers. For some years before the writer saw the patient small irregular stones had travelled subcutaneously from one part of the hand to another until extruded by ulceration. The toes, and especially the great toes, had been similarly, but less intensely affected. One night 18 months before she consulted the writer the

left elbow joint suddenly became intensely painful and inflamed. A few days later a sinus formed above the olecranon, through which was discharged a quantity of mortar-like material containing concretions. The inflammatory symptoms and general malaise disappeared in 8 or 10 days and the sinus healed in a few weeks. Several hard nodules, some superficial, others deeper, remained on the extensor surface. One of these near the olecranon was an inch long and movable with the skin. Another of the size of a pigeon's egg, was situated in the tendon of the triceps and not connected with the skin. The capsule of the joint and the bones appeared normal, and the movements were unimpaired. There were no tophi in the pinnae. The fingers were thickened *in toto*, and, though the joints appeared normal, were clumsy and stiff. The finger tips were bluish-red, tense, and in places of stony hardness. Pultaceous material could be expressed through numerous ulcers. The urine was faintly acid, and contained no sugar or albumin. A slight turbidity disappeared on the addition of acetic acid. The sediment obtained by centrifugalisation consisted of amorphous material without crystals. The patient had chronic dyspepsia. Her mother suffered from "arthritis deformans," which especially affected the hands.

Phosphates and carbonates have occasionally been found in tophi in addition to urates, but with few exceptions in inconsiderable quantities. According to Garrod it is doubtful whether tophi which contains much phosphate should be regarded as gouty. But the symptoms of this case were so typical of gout that the question arose whether tophi which contain no urates may not have some relation to true gout. Permission to examine the blood or to make experiments on metabolism

was unfortunately refused. If the case were one of genuine gout the urates originally deposited in the tophi must have been gradually absorbed and subsequently replaced by phosphates and carbonates. But that absorption could be so complete that no trace of urates was present in material obtained by scraping a tophus with a sharp spoon is improbable. On the other hand if the primary deposit consisted of phosphates and carbonates the diagnosis of gout was incorrect. The writer has found only 3 cases analogous to his own. In one a man was treated by Morel-Lavallée (*Rev. de Thérapéut.*, 1901) for repeated attacks of inflammation of the dorsal surfaces of several terminal phalanges. After a time small ulcers appeared and mortar-like pultaceous matter could be expressed. It was composed chiefly of calcium phosphate and contained no uric acid. There was also a small ulcer on the left cheek, which discharged phosphates. The cutaneous and subcutaneous lymphatics were full of this material, and formed a fine white network visible through the translucent skin. Possibly the phosphatic deposit originated in them. A second case is reported by Jeanne (*Bull. et Mém. de la Soc. Anatom. de Paris*, 1900). Hard, painless, irregular concretions appeared in the subcutaneous tissue. Originally having no connection with the skin they gradually invaded it and were finally extruded after producing slight inflammation and ulceration. The concretions were at first limited to the legs, but slowly appeared over the whole body, except the head, neck, palms, and soles. The man died under chloroform at the age of 26. The subcutaneous nodules were formed of fibrous tissue, in which were numerous cysts, which contained a soft chalky material. The fibrous tissue contained giant cells and large mononuclear cells resembling those of a sarcoma.

The third patient, a woman, aged 31, was recently shown by Riehl (*Münch. Med. Woch.*, Jan. 28, p. 164) at a meeting of the Leipzig Medical Society. At the age of 16 she cleaned some copper utensils with sulphuric acid. Numerous hard tumours from the size of a pea to that of a hazel nut then appeared on the hands, especially on the flexor and lateral aspects of the fingers and the palms. They were not adherent to the underlying structures and were mostly covered by normal skin. Occasionally, however, one or more became painful, an ulcer formed over them, and hard mortar-like masses escaped. The joints and other organs were normal. The disease had always been thought to be gout, until the writer excised a nodule and found that it contained a crystalline and amorphous material which consisted entirely of calcium carbonate and phosphate. The concretions were enclosed in a fibrous capsule and were situated in the cutis and subcutis. Riehl supposed that they were the inflammatory products of a sulphuric acid dermatitis.

See also "Subcutaneous Phosphatic Concretions," "REVIEW," Vol. IV., p. 188.

DEUTSCHE MED. WOCH., Feb. 13, p. 114.
**Persistent Thymus Gland and Death
 under Chloroform.**

By Prof. L. LAQUEUR.

A boy, aged 14, was anæsthetised with pure chloroform. After a short stage of excitement, and when only about 2 gm. had been used, he suddenly became pale, the heart ceased to beat before the complete arrest of respiration and death occurred before the operation was begun. The pupils before and after death were widely dilated. Prolonged attempts at resuscitation failed. Chloroform was given

on a mask with free access of air. Post mortem the right ventricle was relaxed and somewhat dilated, and the left ventricle was small and contracted. The valves were healthy. The lungs and brain were normal. The thymus gland, which was persistent, was $3\frac{3}{8}$ in. long, and $2\frac{1}{8}$ in. wide, and reached inferiorly to the pericardium where it bifurcated into 2 lobes. The lingual tonsil was greatly hypertrophied, and the spleen was enlarged, being nearly 6 in. long. The intestinal follicles were slightly enlarged.

Von Kundrat (*Wien. Klin. Woch.*, 1895, Nos. 1 to 4) first pointed out the frequency of a persistent thymus gland in cases of sudden death under chloroform in children and young adults. He had seen 10 cases of death from chloroform, ages varying from 12 to 31, in which a persistent thymus was found post-mortem. In all but one cardiac preceded respiratory paralysis. In one case death did not occur until half an hour after the patient had regained consciousness. He cites 2 similar cases published by others, making 12 in all. The vascular and nervous systems were healthy in every case. The one abnormality common to all was a thymus gland, which measured from $2\frac{3}{4}$ to 4 in. in length, and often covered the greater part of the anterior surface of the pericardium, though the patients were of an age at which the gland should be atrophying or absent. There was not merely persistence but hyperplasia. As a rule the structure of the gland was normal. The next most frequent lesion was hypertrophy of the lingual tonsil and the follicles of the posterior pharyngeal wall (in 8 of the 10 cases). Less constant was more or less hypertrophy of the palatine tonsils, the bronchial glands, the solitary follicles, and Peyer's patches. Occasionally enlarged cervical glands were present. The spleen was enlarged in 7 of the 10 cases;

in 2 to thrice its normal size. The writer's case exactly agrees with Kundrat's description.

Cases of sudden death from cardiac paralysis, in which the common abnormality found was an enlarged thymus, have occurred under the most diverse circumstances. Thus Heusler has reported a case of sudden death after ether in a girl aged 12; post mortem the thymus and spleen were found to be enlarged. Nordmann states that an apparently healthy recruit, aged 20, who was a good swimmer, after being in the water for 3 minutes came out, complained of being cold, turned suddenly pale and died. The thymus was of the size of a fist, and the lingual glands, tonsils, bronchial glands, and spleen were enlarged. Other reports show that the injection of antitoxin, or, in infants who suffer from spasm of the glottis, even the depression of the tongue with a spatula, may be followed by sudden death. In infants an enlarged thymus alone is believed to be a frequent cause of sudden death. In no case have attempts at resuscitation succeeded.

The cause of death in hypertrophy of the thymus is obscure. Many have explained it by direct pressure on the heart, trachea, or vagus nerves. That the thymus could compress the trachea sufficiently to produce death by asphyxia is unlikely, and the symptoms are those of cardiac paralysis, not of asphyxia.

The following practical conclusions may be drawn: (1) Children and young people who are known to have enlargement of the thymus should not undergo general anæsthesia either by chloroform or ether. (2) Dulness over the manubrium sterni or the upper part of the sternum if due to the thymus does not, as it frequently does if due to enlarged bronchial glands, extend beyond the borders of the

sternum (see "REVIEW," Vol. IV., p. 359). But as there is no constant physical sign of enlargement of the thymus, its presence must be diagnosed indirectly. (3) The most useful indication is hypertrophy of the lingual tonsil, especially if accompanied by enlargement of the palatine tonsils, the follicles of the posterior pharyngeal wall, adenoids, and a splenic tumour. In children and young adults an examination of these organs before the administration of an anæsthetic is of at least equal importance to that of the heart. In fact cardiac patients usually bear chloroform well as long as there is satisfactory compensation. (See "REVIEW," p. 283).

See also "REVIEW," pp. 280 and 301.

MÜNCH. MED. WOCH., May 27, p. 877.
Recovery from Tuberculous Meningitis.

By Dr. BARTH.

A girl, aged $2\frac{3}{4}$ years, began to show symptoms of measles on June 2. On June 11, after the temperature had fallen there was renewed pyrexia with vomiting, diarrhoea, and headache. Some improvement followed the use of calomel and an ice-bag, but on June 25 the temperature rose to 105° and occipital headache and intolerance of light and noise appeared. Constipation was present. The pupils were dilated and reacted sluggishly, the head was retracted, and Kernig's sign was present. All the organs appeared to be healthy; the spleen was not enlarged, and there was no abdominal retraction. The urine contained neither sugar nor albumin. Later the headache became more intense, the pulse was infrequent though pyrexia continued, and Cheyne-Stokes respiration and tonic spasms in the limbs appeared. Consciousness was gradually lost

and there was incontinence of urine and fæces. Lumbar puncture was performed. No improvement followed, but the diagnosis of tuberculous meningitis was confirmed by the discovery of tubercle bacilli in the sediment obtained by centrifugalisation. Treatment had consisted in giving iodide of potassium, quinine as an antipyretic, opium as an anodyne, and in using ice-bags and baths. Blood was then abstracted by placing in the course of a week 8 leeches over the mastoid processes. On July 15 there was marked improvement in the meningeal symptoms, but considerable collapse, for which wine and subcutaneous injections of oil of camphor were given. Iodoform ointment was rubbed into the scalp and back of the neck, but was replaced later by inunctions of soft soap over the back (see "Treatment of Local Tuberculosis by Inunctions of Soft Soap," "REVIEW," Vol. II., p. 297). Finally about 20 gm. of Credé's ointment (colloid silver, see "REVIEW," Vol. I., p. 177, Vol. II., p. 166, and Vol. III., p. 467) were rubbed into the skin of the limbs as recommended by Daxenberger, who claims to have thus cured 3 cases of meningitis.

The child did not become bodily and mentally sound until the end of the year. The pupils were sluggish and usually dilated, and there were complete deafness and blindness. The discs were normal. Though not paralysed, she could not walk, and lay with the legs rigidly flexed. There were constant choreiform movements of the arms and head, and the hands were continually rubbing and scratching the head and body. Liq. arsenicalis

and iodothyrim were given, and slight improvement was apparent about the middle of Sept. First hearing, then speech, and finally sight were recovered. After 10 hypodermic injections of strychnine had been given the patient successively recovered the power of sitting, standing, walking, and retaining urine.

Many have denied the possibility of recovery from tuberculous meningitis, but cases were long ago recorded by Prof. Clifford Allbutt and others in which patients recovered from one attack of meningitis and died of a second. Signs of both recent and old meningitis were found at the necropsy. Since the introduction of lumbar puncture the possibility of recovery has been placed beyond dispute. Thus Freyhan, in 1895, published a case of typical tuberculous meningitis (*Deutsche Med. Woch.*, No. 36), in which recovery occurred, although tubercle bacilli had been found in the cerebro-spinal fluid, and Henkel, in 1900, recorded a second case (*Münch. Med. Woch.*, 1900). As to treatment, where such diverse remedies have been employed it is allowable to be sceptical as to the special efficacy of any. The improvement in the present case followed so immediately the abstraction of blood as to convince the writer that there was a causal relation between them. However this may be, it is remarkable that the patients who have recovered have usually been treated energetically. Dr. Emil Nilssen claims to have cured a patient of tuberculous meningitis by the inunction over the scalp of iodoform ointment, which was also employed in this case.

M E D I C I N E .

Multiple Abscesses of the Liver Secondary to Perforating Ulcer of the Stomach.

—Staff-Surgeon Fasken, R.N. (*Lancet*, May 31, p. 1535).—Multiple abscess of the liver is a rare complication of gastric ulcer, whether perforated or unperforated. Murchison has published a case, but general pyæmia also occurred. In the following case no signs or symptoms pointed to the existence of gastric ulcer. This latency occurs in no small proportion of cases. Savariaud estimated the latent cases as 20 per cent. of all cases of gastric ulcer. Although the symptoms pointed to pyæmic abscess in the liver the patient had never been abroad.

On Feb. 22 an able seaman was admitted to hospital, complaining that he had suffered on and off for about 2 years from abdominal pain, situated chiefly in the right iliac fossa near the umbilicus. The bowels were acting irregularly. There was no history of vomiting. The temperature was 102°. The hepatic dulness in the right mammary line measured 5 inches vertically. There was considerable jaundice. The pulse was 76. The abdomen was somewhat distended and palpation caused a good deal of pain, especially over the cæcum. The tongue was thickly coated. Fomentations, a glycerine enema, bismuth, and a milk diet were prescribed. On the evening of March 1 he had a rigor and complained of severe pain over the hepatic area. The temperature was 102.2°. On the 3rd he had more rigors and complained of a tender spot over the liver in the region of the gall-bladder. Paroxysmal rigors came on at irregular intervals and were followed by profuse perspiration with great prostration. The tongue became dry and brown and tenderness over the liver area was greatly increased. On the night of the 22nd he vomited a quantity of greenish bilious fluid. Two exploratory punctures were made

into the liver below the costal margin, but only a few drops of blood were extracted. On the 24th two more exploratory punctures were made behind in the eighth intercostal space, but again with a negative result. A few days later ascites and œdema of the lower limbs appeared, and a pleuritic rub was heard on the right side. The hepatic dulness in the right mammary line was now 6½ in. vertically, but the enlargement was uniform and free from nodulation. On April 10 he was much weaker and greatly emaciated. The skin and conjunctivæ were markedly jaundiced. There was great tenderness on pressure below the lower margin of the right ribs with incessant severe pain across the upper abdomen and between the shoulders, which was relieved by injections of morphia. The area of splenic dulness was increased. The symptoms became gradually more aggravated. He still had irregular rigors, followed by fever and sweating. He gradually sank and died on the 15th.

NECROPSY.—Near the œsophageal end of the stomach on its anterior surface was a circular ulcer of the size of half-a-crown with its edges slightly elevated and undermined. From the base of this ulcer a small fistulous channel passed into an abscess of the size of a hen's egg in the right lobe of the liver close to the gall-bladder. The liver was enlarged generally, weighing 96 ounces; both lobes were thickly studded with abscesses varying from the size of a pea to that of a walnut and containing thick yellow pus; the abscess cavity in connection with the stomach was, however, filled with food material. The intervening hepatic tissue was very hyperæmic. There was evidence of considerable surrounding peritoneal inflammation; the stomach, transverse colon, duodenum, pancreas, and liver were firmly matted together, the great omentum being adherent to the upper surface of the left lobe of the liver. The spleen was large, dark,

and firm. The pancreas was hard and lumpy and was firmly adherent to the left kidney and spleen. The abdomen contained a quart of yellowish serous fluid. The right pleural cavity contained fluid and was encroached upon by the enlarged liver, the right lung being pushed up and collapsed and adherent at the base.

Menstrual Eruptions.—M. H. Dufour (*Bulletins de la Soc. Méd. des Hôpitaux*, May 23, p. 480).—A healthy but very nervous married woman, aged 42, had had, for 5 years, at every menstrual period an eruption which recurred *in situ*. The day before menstruation nummular erythematous spots appeared. The first spot was on the right side of the neck, and attained the size of a 2-franc piece. It always recurred *in situ* and was accompanied by 5 or 6 satellites which appeared later. At the 3 last periods a similar spot had appeared at the bend of the right elbow, and at the end of the last period 1 had appeared for the first time on the back of the left hand. The evolution of the spots occupied 8 days and they were accompanied by considerable smarting. After some days they gradually lost colour. In the intervals between the periods slight pigmentation indicated the sites of eruption and in some places this disappeared entirely. At the onset the eruption was accompanied by malaise, a febrile state, and headache. For some months the patient had noticed a disagreeable odour from the menstrual blood. Vaginal examination was negative.

The recurrence of the eruption *in situ* points to the existence of a previous lesion on which the neuro-vascular process of menstruation acts electively. A little further development of the morbid process would cause hæmorrhage from the skin, and the occurrence of similar spots on the mucous membranes would probably result in hæmorrhage. Hence the case furnishes a key to the explanation of vicarious menstruation and tends to show that when it occurs there is a preceding lesion of the part which is its seat. The disagreeable odour of the menstrual blood

suggests that the eruption was a toxic effect in connexion with menstruation.

M. Barié (*ibid*, p. 484).—Two days before menstruation one of the patient's hands became painful; then it became covered with large dark-brown spots which were especially marked near the middle of the dorsal surface and on the median part of the palmar surface of the first 2 fingers. This phenomenon was so regular that the patient could foretell by 48 hours the appearance of menstruation. The discolouration lasted 12 to 24 hours and then disappeared. The right and left hands were alternately affected with perfect regularity.

Amœbic Abscess on the Liver.—Prof. Osler (*Med. News*, April 12, p. 673).

CASE 1.—A man, aged 32, was admitted to hospital on Oct. 18. His illness began 4 weeks before with a chill which was followed 4 days later by pain in the right side. This pain gradually increased, and was most intense beneath the right lower ribs. It was especially severe after eating and frequently radiated to the shoulder. Shortly after the onset of the illness he began to notice mucus in the stools, but there was no blood, and only one or two actions occurred in the 24 hours. He had several slight night-sweats. His appetite and digestion were good, and he felt well except for the pain and a sense of weakness. He had not had dysentery.

On the right side over the 6th and 7th ribs was a swelling between the parasternal and mid-axillary lines. It was not red or hot, but on light palpation was tender, and on deep gave a boggy sensation. The right costal margin was a little prominent, and the right rectus a little tense. The liver flatness began at the 5th rib and extended 2 cm. below the costal border. The edge could not be felt. The spleen was not palpable. The stools showed no amœbæ. The leucocytes were 6,825 per c.mm. An extraordinary feature was general diffuse cyanosis. The patient constantly looked as if he had just come

out of a cold bath. The hand forcibly pressed upon the skin of the chest or back left an area of anæmia which was slowly obliterated. The liver was not enlarged or tender on deep pressure. The intercostal spaces were not obliterated. The swelling persisted, but did not increase. The temperature was normal, and there were no chills and no leucocytosis. On the night of Nov. 6 he sweated considerably. Dr. Osler inclined to the diagnosis of necrosis of the ribs. Abscess of the liver was suggested, but the negative character of the symptoms was against it. The leucocytes on the 7th rose to 11,000. On operation an area of infiltrated tissue was found over the region of the swelling. There was a remarkable tag of adhesions between the surface of the liver and the chest wall. The surface of the liver looked normal, but as it felt a little boggy in parts it was aspirated and pus was found. The abscess cavity was then freely opened and drained. Numerous active amœbæ were found in the pus. The patient is now convalescent.

CASE 2.—A woman, aged 64, was admitted on Nov. 11, complaining of pain in the right side. Her illness began 13 weeks before with sudden severe pain in the right side, which lasted 2 days and then subsided. It has recurred ever since at intervals, and there were nocturnal exacerbations. It was usually in the lower part of the right side and radiated to the front of the abdomen, never to the shoulder. There were frequent attacks of vomiting, particularly at night when the pain was worse. The bowels were constipated, except at the onset of the illness, when a little blood was passed. She grew weaker and lost weight. During the last few weeks she was slightly jaundiced. The abdomen was full and large; there was tenderness below the right costal border. Deep under the costal margin was a firm hard mass which descended with inspiration. The edge of the liver could be felt all along the costal border. There was no fever and the leucocyte count was only 10,000. The stools were clay-coloured. She

remained in hospital 2 weeks and her condition improved. She was discharged on Nov. 26.

She returned on Dec. 30, complaining of a great increase in the pain in the side, particularly on movement. There were much nausea, vomiting, and insomnia. She was sallow but not jaundiced. The edge of the liver could be felt 3 finger-breadths below the costal border, and there was irregularity of the edge. There was slight fever rising occasionally to 101°. The stools were clay-coloured. There was a trace of bile in the urine. The leucocytes were only 8,800. The liver gradually enlarged. The abdomen was difficult to palpate, as it was full and large, but a nodular mass was made out below the right costal border. The liver flatness began at the fifth interspace, and gradually, as the liver increased, extended almost to the navel. The pain was peculiar. Any movement caused it, and the patient suffered much at night. She gradually grew weaker and died on Feb. 2.

The necropsy shewed a large solitary abscess of the right lobe of the liver. There was no ulceration of the intestines. Amœbæ were seen in large numbers in a section of the wall of the abscess. In this case there was no suspicion of abscess of the liver, as the pain came on suddenly. Dr. Osler thought that possibly the case was one of gall-stones with cancer. There were no chills or sweats, and the pain was not greater than in some cases of rapidly-growing carcinoma.

CASE 3.—A man, aged 29, was admitted on Dec. 9, 1901. Five months before he had had an attack of dysentery which was very severe for 3 or 4 days and had since continued. The dysentery improved and for some time he was constipated. Two weeks before admission diarrhœa again began and some mucus was passed.

He looked ill and pale. The temperature was normal, but rose to 101.5° in the evening. The thorax was asymmetrical, bulging on the lower right side, as shown in the cyrtometric tracing

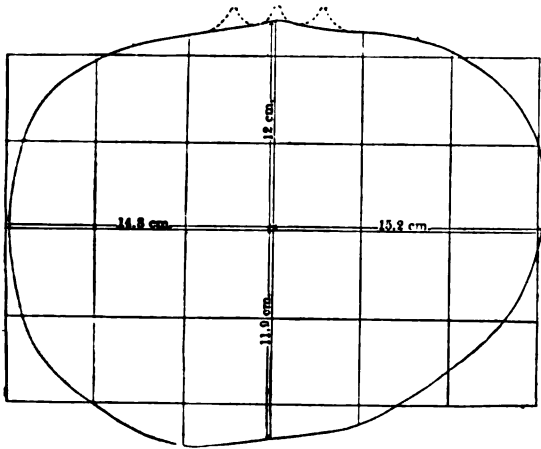


FIG. 1.—Cyrtonetric tracing, showing the enlargement of the right half of the thorax.

(Fig. 1). The liver was enlarged and there was marked fulness in the epigastric and right hypochondriac regions. There was no tenderness. The liver could be seen descending with inspiration. Figs. 2 and 3 show the increase in the area of liver dulness. The measurements were 17 cm. in the nipple line, 16½ cm. in the parasternal line, and 16 cm. in the mid-axillary line. One point of great interest was very definite—Litten's

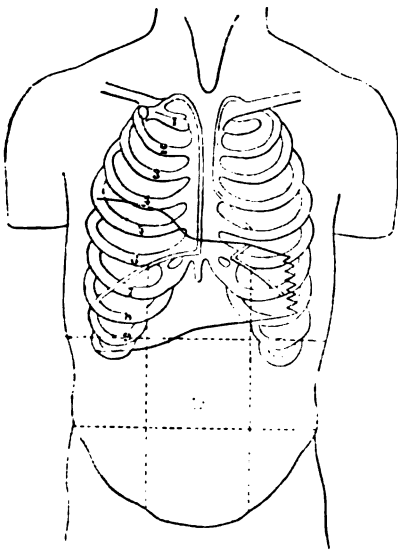


FIG. 2.—Showing the upward enlargement of right lobe.

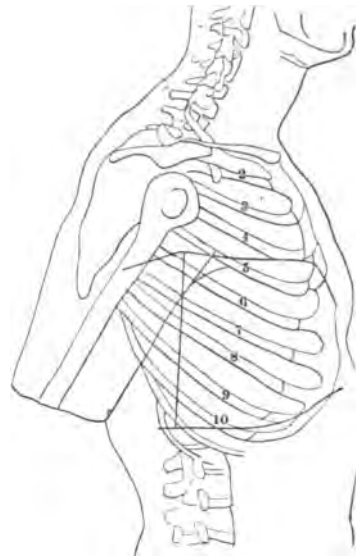


FIG. 3.—Showing the high limit of liver dulness.

diaphragm phenomenon in the fifth interspace. Never has the writer seen the diaphragm phenomenon so high. It almost proved that the bulging and fulness were not due to empyema. In the mucus of the stools *amœbæ coli* were found. On aspiration creamy, glutinous pus was obtained, chiefly made up of granular debris and a few cells, not unlike liver cells. No *amœbæ* were found in it. The leucocytes on the 9th were only 9,000, and on the 10th practically the same. The patient was not jaundiced. He declined operation. The temperature ranged from 97.5° to 101.5°. The abscess ruptured into the lung and he spat up a large quantity of pus. He grew weaker and on Feb. 5 he died.

CASE 4.—A man, aged 40, was admitted on Dec. 4, complaining of pain in the right side and fever. His illness began 2 weeks before with severe pain in the right side, which was increased on deep inspiration. He had had no definite chills, but chilly sensations. There had been marked cough from the onset and hæmoptysis once during the first week. The bowels had been regular.

He looked ill, had a sallow, gray, septic appearance, and was somewhat cyanosed. Respiration

was increased. The chest was emphysematous. On the right side was dullness to the 4th rib with distant breath sounds and diminished vocal fremitus. When sitting up the dullness reached the lower border of the 3rd rib. Over the dull area were diminished vocal fremitus and distant breath sounds. The heart impulse could not be localized. The abdomen was full, particularly in the epigastric region. The edge of the liver could be felt 4.5 cm. below the costal border. There was leucocytosis of 22,800. The temperature range for the first few days was between 100 and 104.5°. A needle was inserted in the 6th left interspace in the mid-axillary line and pus was obtained. The 8th rib was resected, and when the pleural cavity was opened it was found normal. The wound in the pleura was closed, and next day a large abscess of the liver was evacuated through an incision in the diaphragm. Amœbæ in abundance were found in the pus. Death occurred on the 9th.

The necropsy showed multiple abscesses of the liver and small ulcers in the colon. The case was hopeless for surgery.

CASE 5.—A man, aged 46, was admitted on Jan. 23, complaining of weakness. During Sept. and Oct. he had an attack which was supposed to be typhoid fever. There were diarrhoea for 3 or 4 days with mucus and blood in the stools, which numbered daily from 3 to 7. He was ill for 3 weeks with what was called typhoid fever. Then he had irregular fever for several weeks with severe night-sweats. On Nov. 9, during the night, he had an attack of coughing of great severity, during which he spat up a large quantity of blood and pus. The attacks of coughing persisted and every morning he coughed up reddish-brown mucus. He has had no pain since Nov. 9, but has been growing weaker.

He looked fairly robust. There was a bulging in the right lower thorax, especially behind and in the flanks, and there was a little fulness at the right costal border. There was dullness in the right side beginning at the 4th rib and extending into the axilla and behind as high as the lower

half of the scapula. The breath sounds were suppressed. Just beyond the posterior axillary line was a region in which large gurgling râles were heard when he coughed and there was a friction sound in the right axilla. The edge of the liver was not palpable. There were leucocytosis of nearly 15,000 and decided anæmia, the red corpuscles numbering only a little over 2,500,000. The sputum looked like anchovy sauce—a condition almost characteristic of hepatic abscess discharging through the lung. No amœbæ, however, were found in it. On the 24th a needle was inserted deep between the 8th and 9th ribs in the posterior axillary line and a brownish-red very grumous-looking pus, which contained motile amœbæ, was drawn off. As several cases had occurred in which the abscess discharged through the lung and the patients had made a good recovery it was thought best to wait a few weeks before operating. The expectoration and cough have diminished, the temperature has become normal, and he has gained weight. The right chest became flattened, there was less expansion and the intercostal spaces became much narrowed. There was dullness to the fourth rib. Over the dull region was feeble breathing, and on coughing medium-sized râles were heard.

LATENCY.—In Case 1 the abscess was not large and the symptoms until just before the operation were singularly negative, there being absence of fever, chills, sweats, and leucocytosis. There were, however, 2 features worthy of comment—the diffuse cyanosis, for which Dr. Osler cannot offer any satisfactory explanation, and the localised swelling above the right costal border, which is sometimes seen in abscess of the liver which approaches the surface and is about to perforate. On operation, however, this was found associated with a group of adhesions between the liver and the costal margin but there was no necrosis and no signs of the abscesses pointing.

Case 2 was what Niemeyer used to call "a mortifying post-mortem disclosure." A few days

after admission the patient was seen with a view to surgical interference, but the symptoms seemed to point so strongly to malignant disease that exploratory operation was not thought expedient. But as the specimen showed, operation might have done good, for the abscess could have been easily evacuated. Case 4 illustrates one of the commonest errors in diagnosis—mistaking a large abscess projecting upward into the lung for empyema; nor is this diagnosis always cleared up by the exploratory needle. Large abscesses toward the surface of the right lobe pass high into the pleura in the direction of least resistance and the symptoms may closely simulate those of empyema. Case 5 at present would be readily taken for empyema which had perforated into the lung and was healing, but the character of the attack following dysentery, the sudden expectoration of the characteristic pus, and the presence of amœbæ were sufficient to settle the diagnosis.

LEUCOCYTOSIS IN ABSCESS OF THE LIVER.—These cases and others show that leucocytosis is not, as is stated, invariably present in amœbic abscess of the liver. In Case 1 on admission, the leucocytes were only 6,000 per c.mm. and only once rose to 11,000. In Case 2 they were only between 8,000 and 10,000; in Case 3 only 9,000. In Case 4 there was a leucocytosis of 22,000, and in Case 5 of 15,000. Thus in 3 cases there was practically no leucocytosis. Amœbic abscess of the liver is not always associated with existing ulceration in the intestines, as is shown by Case 2. The patient may have had dysentery months before and the ulcers may have healed.

alarming illness but under proper treatment it is curable. The patients were all girls whose ages varied from 7½ to 20 months, but the disease also occurs not uncommonly in older children. In one of the 8 cases the parents were rheumatic and in another there was a family history of gout. In 6 cases the previous health was excellent and in 2 chronic dyspepsia and rickets were present. All the patients had been artificially fed. Two had shown symptoms of infantile scurvy, one severe, the other slight, and influenza had preceded the pyelitis in 2 cases. In all but one case there was troublesome constipation; in some there were occasional attacks of diarrhœa. In at least 5 cases there was a history either of soreness about the anus or pain during defecation, or blood was seen in the motions.

The symptoms are generally ushered in with a rapid rise of temperature, so that pneumonia or influenza was often suspected. In 4 cases there were one or more rigors. Apart from malaria no account of a rigor in a child under 2 without pus in the urine appears to have been published. Suppurative or other surgical conditions do not seem to be attended with rigors in young children. The temperature was frequently above 104° and its type was more or less remittent, so that the chart often looked like that of typhoid fever. The effect of treatment on the temperature is very striking. A characteristic of the disease is extreme restlessness and distress. The appetite is often well maintained and consequently the emaciation may not be rapid. There may be screaming fits as in colic. There may be only uneasiness or slight pain on micturition, but just as frequently there are no symptoms with micturition. There was excoriation or fissure of the anus in 5 of the 8 cases, and in 2 soreness of the vulva. Tenderness on palpation of the kidney was distinct in 2 cases. The urine was always acid, generally extremely so; in one case there was a peculiar foetid odour. Albumin was always present in small amount, but in no case more than could be

Acute Pyelitis in Infancy.—Dr. John Thomas (*Lancet*, May 24, p. 1470) has observed 8 cases since Dr. Emmet Holt of New York wrote his paper in 1894. The condition cannot therefore be rare. Undiagnosed it causes an

accounted for by the pus cells present; no tube casts could be found. Pus was always present in considerable amount; sometimes the urine was turbid with it. A few epithelial cells of different shapes were usually found. Blood was only detected in one case in which there had been scorbutic hæmaturia not long before. Bacteria were always visible in large numbers in the freshly-passed urine, and cultures of the urine gave pure growths of the bacillus coli communis. No crystals were found during the illness but large quantities of uric acid and oxalates had been passed on former occasions.

The cause of the disease is the bacillus coli communis. It may reach the pelvis of the kidney by the blood or lymph-stream or the urethra. The great preponderance of females suggests the last as the usual source. There must also be a lowering of the vitality of the tissues. The diagnosis depends on the presence of pus and bacilli in acid urine, the occurrence of rigors (almost conclusive), and any local tenderness with considerable fever. The prognosis is favourable: under proper treatment the cases improve rapidly as regards the temperature and symptoms, but the pus does not usually disappear from the urine for several weeks.

Treatment consists in rendering the urine neutral by administration of alkalis. The results are most striking. Dr. Thomson used citrate of potash, which must be given freely before the urine loses its acidity. 24 grains in the 24 hours may suffice in less severe cases but generally from 36 to 48 gr. are necessary. This quantity of alkali is very beneficial but it usually causes depression. The temperature became subnormal and the child became flabby and nauseated. Relapse may occur when the potash is prematurely diminished or discontinued. Antiseptics given alone are not very efficacious but in combination with alkali are helpful. Salol acts well; urotropin seems less active; creasote was found very useful by Baginsky.

Inherited Recurrent Attacks of Jaundice and Abdominal Crisis with Hepato-Splenomegaly.—Sir Thomas Barlow and Dr. Batty Shaw (*Lancet*, May 31, p. 1536).—The patients are a lad, aged 19, and his mother, aged 47. The former at birth was very delicate, pale and waxy-looking. At 5 he was first noticed to be jaundiced. Since then he had attacks of semi-jaundice lasting 3 or 4 days, accompanied by pain in the upper abdomen. For the last 6 years he had been troubled with indolent ulcers about the ankles. None of his brothers or sisters suffered from such attacks, though a brother had jaundice once in childhood. On admission to hospital, in 1899, he was undersized for his age and looked anæmic and yellow. The liver was moderately enlarged; the spleen was very enlarged, reaching 2 in. below the level of the umbilicus. There were signs of cardiac dilatation, particularly of the left ventricle. The stools were repeatedly examined and were always brown. The urine often was highly coloured; no bile could be demonstrated, but urobilin was detected spectroscopically. Examination of the blood showed signs of secondary anæmia. The temperature rose a little but was never more than 99.6°. He was again admitted in May, 1901. There was practically no change in the size of the spleen but a slight reduction of the liver dulness below the right costal margin. A few glands were noticed in the neck. Besides a reduction in the number of red corpuscles of the blood and of the hæmaglobin, poikilocytosis, nucleated red corpuscles, and basophile cells were found, and during the earlier part of his stay in the hospital the leucocytes numbered 14,000 per c.mm.

The mother had her first attack of jaundice at 5, and had had repeated attacks since. With the jaundice there were pains in the upper abdomen and vomiting. She had one attack whilst pregnant with the child whose condition has been described. In an attack in Sept. of last year the liver and spleen were considerably enlarged. Urobilin and bile were absent from the urine. The blood showed the same characters

as in her son except that there were no nucleated red corpuscles. She had an indolent ulcer on the right leg, its onset dating before marriage. Both patients had always resided in England and were temperate. There was no evidence in either case of septic infection.

Similar attacks in 3 generations have been described by Dr. Claude Wilson, and Dr. James Finlayson has called attention to their occurrence in several collateral members of a family. The special points in the above 2 cases are: (1) the chronicity of the affection, lasting in the son at least 14 years and being probably congenital and in the mother for a much longer period; (2) indolent ulcers; (3) the jaundice was always slightly present and underwent periodic intensification and was then associated with pain in the liver or spleen or in both; (4) the mother's case appeared to be an example of Hanot's cirrhosis of the liver, and the son's an earlier incomplete stage of the same malady. The woman had grown to maturity and had had a family, and but for the disturbance caused by the periodic attacks of jaundice and abdominal pains was able to enjoy life.

Albuminuria from Mumps.—Dr. Granier (*Journ. de Méd. et Chirurg. Pratiq.*, Feb. 25, p. 154).

CASE 1.—A strong, healthy girl, aged 16, had mumps. She did not take to bed. After a few days in spite of cold and wet she went to her work as usual. Six weeks later she could not walk and the legs became slightly swollen in the evening. There were found œdema of the legs and albuminuria. Under milk diet and rest in bed great improvement took place, but in the following winter she gradually became worse and died 16 months after the attack of mumps.

CASE 2.—A child, aged 12, had mumps. He was kept at home 3 days and then returned to school. In about a week the legs and eyelids began to swell and there was a little albumin in the urine. A few days later he was seized with convulsions and artificial respiration was necessary. Purgative and diaphoretic

treatment, and strictly milk diet, led to complete recovery.

See also "REVIEW," Vol. II., pp. 428, 604.

Cysticercosis Cerebri Diagnosed by Lumbar Puncture.—F. Hartmann (*Wien. Klin. Woch.*, May 22, p. 547).—A peasant, aged 24, began to suffer from headaches early in Feb., 1901. Towards the end of Sept. these became intense, and there was frequent vomiting. The limbs were sometimes rigid, sometimes showed clonic spasms with deviation of the eyes. The patient was unconscious of these attacks. All the organs appeared normal. There was no hemianopia or contraction of the visual fields. Vision was $\frac{3}{8}$, and there were choked discs. The eyes were seldom moved spontaneously, and on attempts at extreme lateral movements nystagmus appeared. There was salivation. The chief mental disturbance was an inability to localise objects in space or events in time. This depended on loss of perception and conception of direction, and of memory for, and the power of psychical elaboration of impressions received, in so far as these functions are associated with the normal working of the sensory optic tract. The patient could not find his bed or wash-stand, and with eyes open could not describe the position of the door, stove, or windows. After prolonged residence in hospital he could not remember when the eyes were shut whether objects were on his left or right, though their positions had been carefully impressed on him just before. Sensations of hearing and taste and the power of localising them correctly were unimpaired, though the impressions produced were soon forgotten. The perception of objects in the same plane was intact, and complicated figures were described correctly. Distances also were usually judged correctly when over 50 cm. from the eyes. Solid objects could be recognised only by looking at the different surfaces in turn.

The more the object was seen in perspective the more difficult it was to recognise, *i.e.* the stereoscopic sense was absent. There was corresponding optic aphasia with intact optical memory-pictures. A bilateral lesion of the parietal cortex in the optic motor-region was diagnosed. With this the sensory optic paths and the sensory centre would be intact, but ability to connect the received optic impressions with corresponding motor ideas would be lost. The absence of cortical motor disturbances of speech fixed the lesions in the lower and posterior portion of the parietal lobes, and the bilateral choked discs pointed to some growth encroaching on the intracranial space. Lumbar puncture was performed to relieve the headaches. A gelatinous mass escaped with the cerebrospinal fluid. It was an unusually large sac of a *cysticercus cellulosæ* (Fig.). Doubtless the cerebral affection was of the same nature.



Cysticercus from the spinal intra-arachnoid space. (Natural size).

It is remarkable that 2 of the rare cases in which the optic-motor cortical centres were affected were due to cysticercosis, with implication of the cerebral cortex. The writer's patient twice a year ate raw pork.

General Infections due to the Staphylococcus Aureus and to the Streptococcus. Dr. Giuseppe Bellei (*Lancet*, March 22, p. 807).

CASE 1.—A medical man had a spot of chronic eczema behind the left ear which he constantly scratched, sometimes producing excoriations. One day he opened an abscess on the arm of a woman and before he disinfected his hands scratched the spot. Two days afterwards he noticed near the spot a red painful swelling which rapidly became larger and more painful and his temperature rose to about 102° . Three days later a deep incision was made but little pus came out. The wound was dressed frequently during the ensuing week and appeared to improve. In spite of this the general state became worse and the temperature continued high (from 102° to 104°). In his blood and in the abscess in the woman the staphylococcus pyogenes aureus was found in pure culture. Some days later small abscesses were observed in different parts of the body, all of which were caused by the staphylococcus pyogenes aureus. There was serous pleurisy, in which not the staphylococcus aureus, but the staphylococcus albus was found. About 60 abscesses, some as large as a man's fist, were opened. The temperature always remained high and death occurred after 2 months with symptoms of cardiac paralysis. The woman had many other abscesses in different parts of the body after the one in the arm, but she recovered. She was always free from fever, and was able to work.

The staphylococcus pyogenes aureus produced in the woman only abscesses, but in the man fatal septicæmia. This result was due not to inherent virulence of the microbe, but to special conditions of the patient. Laboratory investigations tend to show that the staphylococcus pyogenes albus is only an attenuated form of the staphylococcus pyogenes aureus. Now, the man had serous pleurisy, and the exudation yielded only, and constantly, the staphylococcus pyogenes albus, which was no longer able to generate pus.

CASE 2.—A boy was wounded by a nail in the right leg. Three days later an abscess, appeared at the seat of injury, and was opened. But 3 hours afterwards there were abscesses in the body and symptoms of meningitis. Death occurred in six days. Blood withdrawn from one of the veins of the left arm contained the staphylococcus pyogenes aureus in pure culture.

The two following cases were caused by the streptococcus.

CASE 3.—A woman for many years had chronic purulent inflammation of the gums and maxillary alveoli. She caught a cold which was accompanied by pyrexia and was followed some days later by inflammation of the throat. The illness appeared to be of little importance at first, but sudden severe pain in the ear, and symptoms of mastoid suppuration appeared. An operation was performed, but streptococcal general infection followed, and the patient died in a week.

CASE 4.—A man, aged 48, had been in good health until the age of 40, when he began to suffer from chronic suppurative inflammation of the gums and the maxillary alveoli. He had a severe sore-throat. In the evening there was a rigor and an abscess formed in the right tonsil, and was opened. The pus on cultivation showed a very small streptococcus and a saccharomyces. After the operation he felt much better, the pain in the throat subsided, he was able to swallow, and the temperature, which had hitherto been about 100°. fell to 98°. But about 7 a.m. next day he was suddenly seized with a rigor, which was followed by a rise of temperature to 104°. He died from heart failure.

A streptococcus of the same microscopic appearance as that found in the abscess was isolated from the blood. The patients in Cases 3 and 4 had suffered for many years from disease of the teeth accompanied with suppuration. Prof. Augusto Murri, of the University of Bologna, has often in inflammation of the throat seen suppuration of the adjacent lymphatic glands, or general

infections in the subjects of chronic suppurative disease of the gums and maxillary alveoli.

See also "REVIEW," Vol. IV., p. 87.

Hæmorrhagic Cystitis in Influenza.—A. Breton (*Gazette des Hopitaux*, May 13, p. 533).—The 3 following cases occurred in the writer's practice during an outbreak of influenza.

CASE 1.—A woman, aged about 50, was attacked on Dec. 14, 1901, with influenza. There were naso-pharyngeal, bronchial catarrh, prostration, pyrexia, etc. After 4 or 5 days the symptoms disappeared and the patient was thought to have recovered. Suddenly bladder symptoms appeared in the hypogastric region. There were pain and tenderness, frequency of micturition, vesical tenesmus, a sensation of anal pressure, scalding during micturition, and finally hæmaturia, which continued for 3 days and disappeared on the patient being kept in bed. There was no lumbar pain or tenderness. For a week after disappearance of the blood the urine was still highly coloured and contained a slight muco-purulent deposit. For a further period of 12 days there were diminishing symptoms of cystitis, especially in the upright posture. Recovery was complete by the middle of Jan., 1902. A little later she nursed her son who was laid up with influenza and had a relapse of vesical symptoms, perhaps from the fatigue. The second attack lasted only 6 days and was not accompanied by hæmaturia.

CASE 2.—A woman, aged 65, had influenza. There was considerable congestion of both lungs and in 3 days symptoms of cystitis appeared and the other old symptoms disappeared. There was copious hæmaturia for a week. This was probably due to the fact that the patient was unable to stay in bed. Vesical pain was great; it prevented sleep and required narcotics to allay it. As in the other cases there was no renal pain. After the blood had disappeared there was muco-pus for some 10 days in the urine. In this case also the patient's son

suffered from influenza and the mother had a relapse as the result of nursing him. The second attack disappeared in a week's time and the patient was restored to health.

CASE 3.—A strong woman, aged 34, had suffered from influenza for 10 days before seeking advice. There was marked naso-pharyngeal catarrh. Cystitis set in with abundant hæmaturia at the time that the other symptoms were relieved. Absolute rest in bed and careful treatment led to uninterrupted recovery. The duration of this case was rather longer than that of the others.

In these cases the writer carefully looked for all possible causes of hæmorrhage, but failed to find any rectal or uterine disorder. Moreover, the symptoms obviously pointed to inflammation of the bladder. A striking feature was the disappearance of the general symptoms of influenza when the cystitis began. Influenza may produce various other hæmorrhagic manifestations, such as entorrhagia, metrorrhagia, etc. Pyrexia was not marked in these cases. The treatment recommended by the writer is absolute rest in bed, milk diet, demulcent drinks, hot vaginal douches, and opium and belladonna suppositories to relieve pain. Capsules of turpentine and benzoate of soda were given. The importance of absolute rest is shown by the fact that in 2 of the cases a relapse was produced by getting up too soon.

Bacilli obtained from Syphilitic Semen.

—Max Joseph and Piorkowski (*Berlin Klin. Woch.*, Mar. 24, p. 257, and Mar. 31, p. 282).—A man who has had syphilis and is apparently cured, may have intercourse with a healthy woman without infecting her. But when she becomes pregnant the foetus alone or the foetus and the mother may be infected. The probability of this occurring is greatest in the first 2 years of the disease, and becomes less with time and thoroughness of

treatment. The fact that the semen is infectious long after the disappearance of all symptoms led the writers to examine the semen of 22 syphilitic patients. In order to imitate the natural conditions as closely as possible fresh normal placental tissue was employed as a culture medium. As it could not be sterilised, a number of pieces were placed in sterile Petri's dishes and kept for some time. Those on which no growth occurred were inoculated with freshly ejaculated semen and placed in the incubator at 37°C. In every case colonies developed on the first day. At first transparent and, like minute dew-drops, scarcely visible macroscopically, they gradually become grey and confluent. Microscopically some staphylococci and ovoid bodies (common in semen) were found, but the small dew-drop-like colonies consisted entirely of bacilli. These were broad, often granular, clubbed at one or both ends like the diphtheria bacillus, and about of the size of the hay bacillus. Those clubbed at both ends were characteristically dumb-bell shaped. (Fig. 1). They stained best with carbolfuchsin or gentian-violet, were not "acid-fast," but stained by Gram's method. The rods were never found on uninoculated placenta, however long it was kept in the incubator, and were probably, therefore, inoculated with the semen. Attempts to make secondary cultures in broth, and broth with 2 per cent. of agar failed, but pure cultures were always obtained by re-inoculation from placenta to solid agar and more readily still to agar containing urine or to blood-serum (Fig. 2). On the first a wax-like greyish-white coat was formed, amongst which a few round colonies were prominent (Fig. 1). The whole growth was readily removable in one mass. In gelatine-stab preparations there was a luxuriant whitish growth with a slight removable superficial coating. The second generation showed degenerative changes, the rods were shorter and stained deeper at the poles than in the middle. But when the second generation on agar was re-inoculated on blood-

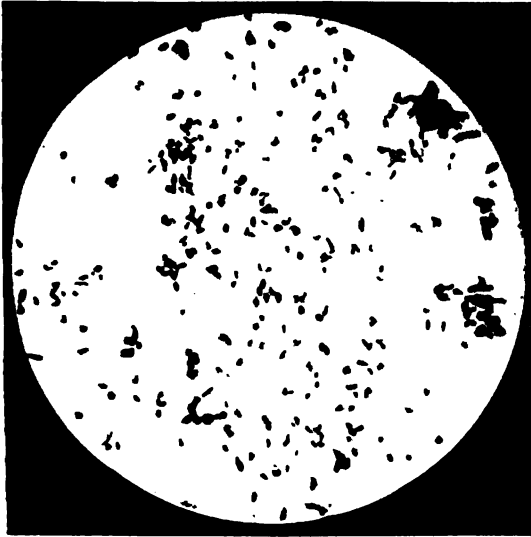


FIG. 1.

Smear specimen from pure culture on blood-serum.

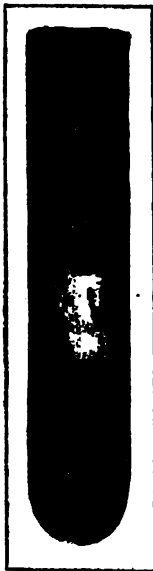


FIG. 2.

Pure culture on agar agar.

serum or placenta the original appearance was regained. Metachromatic polar bodies were present. On potatoes the bacilli formed a slightly moist, glistening, whitish coat. They grew also, though more slowly, at ordinary temperatures, coagulated and turned milk sour, but did not produce gas. In some cases growth was obtained by inoculating blood-serum with semen directly, without the intervention of placental tissue.

The time between infection and the examination of the semen varied in the 22 cases from 5 weeks to 2 years; in 1 case it was 3½ years, but treatment had been postponed and there was a late eruption. In the semen of 4 patients who had been thoroughly treated the bacilli were not found 3 to 10 years after infection. In one case, however, numerous bacilli were obtained from the semen although 5 years had elapsed since infection. Syphilitic ulceration of the scalp was present. No growth was obtained from the semen of healthy non-syphilitic men. The presence of bacilli appeared to be related to the spermatozoa, for (1) if the semen were kept for a few hours until all the spermatozoa were dead no growth could be obtained, and (2) no bacilli were found in semen which contained no spermatozoa even though the patient had recent syphilis. In one such case, however, the bacilli were obtained by inoculating placenta with the syphilitic blood. The bacilli were not pathogenic to mice, guinea-pigs, or rabbits. Though the crucial experiment of injection into man has not been made the writers claim that the constant presence of the bacilli in the semen during recent syphilis, and the equally constant absence from the semen of healthy men and of men whose syphilis appears to be cured tend to show that the organism discovered is the syphilis bacillus.

Are Anopheles the only agents in the transmission of Malaria?—By G. Montoro de Francesco (*La Semaine Méd.*, May 14, p. 161).—The experiments of Ficalbi, Cèli, and other zoologists have shown that the power of trans-

mitting malaria cannot be conveyed by the infected anopheles to its offspring. Each insect must infect itself, and a period varying from 20 to 30 days elapses before it is capable of spreading the infection. How does the anopheles obtain the organism of the form of malaria which appears in spring, and which is so different in its evolution and clinical manifestations from the summer and autumn variety? The same question arises regarding the quotidian form, which becomes epidemic in Italy at the end of the season, and is consequently nearer to the next epidemic, when this form attacks few persons. During the last malarial season Francesco visited Cantanzaro and Cosenza. In these provinces malaria flourishes in 225 out of the 303 communes. He concluded that malarious localities exist in which no anopheles are found. In Belmonte-Calabro the two boroughs of Salice and Spineto are on either side of a valley at the bottom of which runs the river Vere. The inhabitants are linen bleachers, and the women, during the period of maceration of the flax, nearly all suffer from the severe form of malaria though no anopheles could be found. Numerous other forms of mosquitoes are present.

At "La Marina," also in Belmonte, the temporary irrigation of the ground in May which is then sown, does not render the soil marshy, and leaves no pools. No anopheles are found, yet the severe form of tertiary and remittent malaria occur. Near this district is a marsh which dries completely in summer. A woman and her little boy who were sitting in summer where the marsh had been contracted malaria. Neither had the smallest bite of an anopheles. At the same place some rheumatic patients were ordered sand-baths during the afternoon. Several developed malaria though no trace of mosquito-bite could be found. At Spilinga a child, aged 7, developed pernicious malaria. Some days previously his father had taken him to the plateau of Monte-poro early in the morning when the air was damp. No mosquitoes of any

kind could be found in the district, nor in his home by day or by night. Examination of the blood showed abundant laveranta and amœba præcox.

In Cotrone, in which every form of malaria is prevalent, search by day and night failed to produce a single anopheles. In the town there are only isolated cases seen when the sufferers are obliged to travel by night in infected localities, or to go to the fields early in the morning and return late. Dwellers on the borders of the Neto, whose waters overflow and make the surrounding lands into marshes, are all affected.

Again, there are countries in which the anopheles exists, and cases of malaria occur, and yet the infection does not spread and never becomes epidemic. At the station of Marcellinara Francesco found adult anopheles, eggs, and larvæ in the waiting rooms. All the station officers were free from malaria, and though the station master's wife had suffered from malaria for 3 months the mosquitoes had not succeeded in communicating the infection to her husband or her children.

At Santa Venere drainage had banished malaria, but the trenches cut during the opening of the railway collected water which formed stagnant pools. Malaria returned. Three men were employed at the station at night. Of these 2 had severe malaria, the third had not—all slept in turn in the same room, and the face of the man who remained immune was covered with mosquito bites. His immunity was due to his returning to his room whenever possible at night, while the others remained out of doors. The station master's wife died of pernicious malaria, but he had never had an attack. All the station staff were well except one who had contracted fever at Santa Euphemia junction. The new station master and his 7 children were well though they had been forced to leave the station of Guardavalle-sur-L'Ionio the preceding year on account of malaria. They had never seen or heard of an anopheles at that place. At the junction of Santa Euphemia all the doors and windows of houses and offices

were fitted with gratings according to Grassi's system of prophylaxis:

From 15th to 31st May there were 5 cases.

„ 1st to 15th June	...	3	„
„ 16th to 30th „	...	0	„
„ 1st to 15th July	...	2	„
„ 16th to 31st August	...	2	„
„ 1st to 30th Sept.	...	4	„

Commencement of installation of gratings:

From 1st to 31st Oct. ... 2 cases.

„ 1st November to 31st Dec. 13 „

(Grating fully installed and prophylactic medicaments used). At the houses which were similarly protected all the women and children were affected. The country surrounding the station at Sibari is regarded as one of the worst centres of malaria of the severe form. Since a good supply of water has been provided for the station employees there has been considerable diminution in the number of cases. Anopheles are numerous and though mosquito gratings have been fixed to the station buildings the men are so convinced of their futility that they fasten them open. At Cetraro there was last year a severe epidemic. In June and July there were more than 1,000 cases. In August out of 3,000 inhabitants 2,000 were affected. At the end of that month a malignant apoplectic case occurred. From July 1 to Oct. 31 there were 64 deaths from pernicious malaria. Yet only a few anopheles were found at the railway station and none elsewhere.

CONCLUSIONS. — Malaria exists in localities absolutely free from anopheles. (2) The co-existence of these insects with malarial patients does not necessarily imply the diffusion of the disease. (3) Anopheles, as the Culex—and doubtless many other insects—may play a part in the transmission of malaria, but other causes, notably damp air full of exhalations, play a more important part. The soil is the real domicile of the hæmatozoa. While guarding against mosquito bites it is still more important to avoid exposure at sunrise and sunset.

Quinine should be taken and the rules of general hygiene observed.

See also "REVIEW," Vol. IV., p. 487.

Gold Miners' Phthisis.—Thomas Oliver, M.A., M.D., F.R.C.P. (*Lancet*, June 14, p. 1677). —Gold mining on the Rand is, as coal mining in Britain formerly was, very destructive to human life. The rock is often hard and has to be drilled by machinery worked by compressed air. Large quantities of dust are given off which inhaled cause disease of the lung. A man may work 5 or 6 years before he is rendered *hors de combat*. Gold miners' phthisis, therefore, kills men comparatively young, usually before the age of 40. It is akin to stonemasons' and steel grinders' phthisis. Like all the pneumoconioses it is slowly developed.

The earliest symptom is cough, especially in the morning, with a little frothy mucous expectoration which is expelled with difficulty, but once this is expelled cough in the early stages is not marked during the rest of the day. As time goes on there is increasing dyspnoea. So long as the patient keeps quiet breathing may be easy, but on exertion it becomes difficult, loud, and noisy, as in asthma with, however, little or none of the audible moist wheezing sounds characteristic of asthma associated with chronic bronchitis. By degrees the appetite is lost and emaciation slowly progresses. There is a tendency for the pulse to be quickened, but there is no pyrexia until towards the terminal stage and even then it may not be marked. The dyspnoea is in the early stages out of all proportion to the amount of lung tissue apparently destroyed. The disease may attack any portion of the lung—apex, mid lobe, or base—but like the pneumoconioses it generally has less predilection for the apex than has tuberculous phthisis. From first to last it is, practically speaking, afebrile and painless. Like stonemasons' and steel grinders' phthisis, it seems to commence as a peri-bronchitis and is followed by an increase of the con-

nective tissue of the lung. Like these, too, tuberculosis may be grafted upon it.

Percussion usually gives distinct dulness, limited in area but well defined. At this spot, if it is in front, the breath sounds are louder and coarser than usual and as the disease progresses dry clicking can be heard towards the end of inspiration. The expiratory murmur is prolonged. Over the back of the chest the respiratory murmur is coarser than in health, dry clicking may also be heard with exaggerated vocal resonance. Vocal fremitus may be slightly intensified. The physical signs are those of limited fibrosis of the lung. If the fibrotic patch is in the upper part of the left lung considerable retraction occurs, so that an unusually large area of cardiac pulsation is seen and felt. The closure of the valves at the root of the large vessels springing from the base of the heart is more easily felt, and the apex beat is lifted up an interspace or more. The heart is usually excitable even in the early stages, and this aggravates the difficulty of breathing. The obstructed circulation through the lung may cause the pulmonary second sound to be extremely accentuated. Not until the disease has lasted a considerable time is there any marked difference in the measurement of the two sides of the chest, and not until the terminal stage are moist râles heard to any great extent. The attacks of paroxysmal dyspnoea are not accompanied by cyanosis, nor is there anything approaching early morning asthmatic seizures. Expectorations are not abundant. Tubercle bacilli are absent in the early stages even when the physical signs are well marked.

TREATMENT.—The attention of mining engineers should be directed to improving the methods of drilling the rock. The patients should renounce their work in the very earliest stages of the illness and follow outdoor employment. Strength must be maintained; good food and fats are desirable; virol and the various emulsions are worthy of a trial. Fowler's solution with nux vomica and iodide of potassium

may be given. Until a larger experience of the disease has been gained it would be better to send the patients for change of air, not to the sea-side, but inland to fairly high altitudes—say 700 feet or more above the sea-level.

Polypoid Mixed Tumours of the Œsophagus.—L. K. Glinski (*Virchow's Archiv*, Bd. 167, Hft. 3, p. 383).—A man, aged 68, was admitted to hospital with dysphagia, epigastric pain, nausea, and frequent vomiting. There was an obstruction to the passage of a bougie near the cardiac orifice, which, however, was easily overcome by slight force. On auscultation of the Œsophagus during the act of swallowing, 2 deglutition murmurs were heard. Inanition steadily progressed, and death occurred 3 months after the onset of symptoms.

NECROPSY.—There was a soft tumour of the size and shape of a hen's egg connected by a narrow pedicle $\frac{1}{2}$ in. long with the anterior wall of the Œsophagus. The lower and larger end of the tumour faced the cardiac orifice, which was 1 in. below it, and distended and completely blocked the lumen of the Œsophagus. The pedicle was inserted $7\frac{1}{2}$ in. below the upper border of the cricoid cartilage and ended in the tumour $2\frac{1}{2}$ in. above the cardiac orifice. The length of the polypus was 3 in., and the maximum girth $4\frac{1}{2}$ in. The surface was nodular and in places, especially inferiorly, ulcerated. The pedicle appeared to be a direct prolongation of the mucous membrane and to be unconnected with the deeper structures. Above this tumour was a second polypus, $\frac{1}{2}$ in. long. The Œsophagus which was normal above the tumours became conically dilated below and surrounded the tumour as with a sheath. Its walls were superficially ulcerated opposite the most prominent nodules on the surface of the polypus (Figs. 1 and 2). Beyond general ischæmia all the organs were healthy. Microscopically the superficial layer of the tumour presented the finely granular structureless appearance of necrosis, and

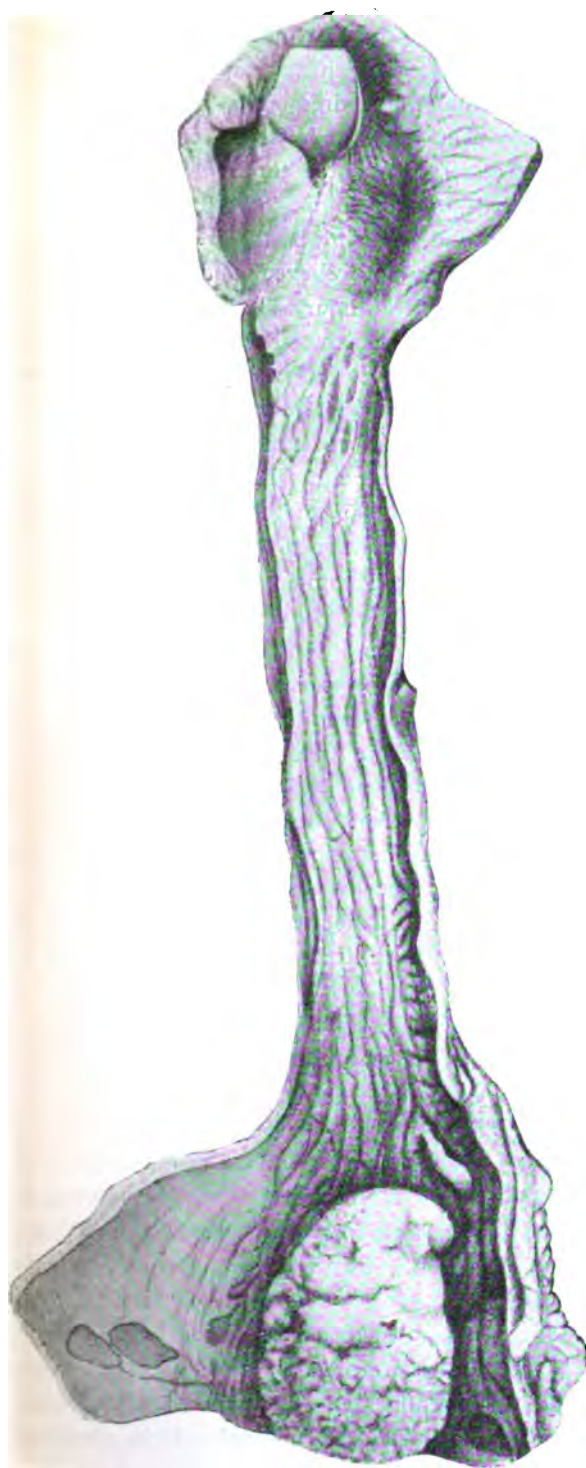


FIG. 1.



FIG. 2.—Lateral View of Tumour.

contained masses of bacilli and cocci. Deeper, the tumour consisted chiefly of cells. These were mostly spindle cells arranged in bundles; between them were (1) leucocytes, (2) round and oval cells mostly larger than leucocytes, and (3) giant-cells with numerous nuclei. Thus at first sight the tumour appeared to be a spindle-celled sarcoma with giant-cells. Sections from other parts showed, however, the presence of myxomatous tissue with an abundant intercellular substance, and fairly numerous striped muscular fibres, which were arranged in bundles or were scattered singly among the other elements. The mode of insertion of the pedicle negated the assumption that the striped muscular tissue was derived from that present in the muscular layers of the œsophagus. The tumour was probably of embryonic mesodermal origin, though such mixed tumours are commoner in children.

Œsophageal polypi are rare. As late as 1898 König stated that any polypus found in the œsophagus was a pharyngeal tumour the pedicle of which had been displaced downwards by gravity. According to Birch-Hirschfeld fibromata, lipomata, and leiomyomata may occur

as œsophageal polypi, and cases of polypoid adenomata and sarcomata have been recorded. But the occurrence of striped muscular tissue in œsophageal polypi is almost unique, the writer having been able to find only 1 case comparable to his own: A man, aged 75, died of inanition from œsophageal obstruction. Post mortem a large polypus, apparently formed by the fusion of several smaller tumours, was found on the lower part of the anterior wall of the œsophagus. Its lower end reached to within $\frac{1}{2}$ in. of the cardiac orifice. Above it on the anterior œsophageal wall were several whitish nodules, some of which were polypoid. Near the cardiac orifice, within the abdominal cavity, was a lymphatic gland which contained a metastatic growth. The œsophageal tumour was chiefly composed of striated muscular fibres in different stages of development. The metastatic growth consisted of round cells, small spindle-cells, myxomatous tissue, and fibres, in some of which transverse striation was present. Wolfensberger considered the growth to be a rhabdomyoma. Growths containing striated muscle are stated to be practically limited to the genitourinary organs of children.

These tumours of the œsophagus are probably indistinguishable clinically from carcinoma, though perhaps a disproportion between the dysphagia and the ease with which the obstruction can be overcome with a bougie might suggest the diagnosis. The distinction is important, as a polypus in the lower part of the œsophagus might be removed by gastrotomy. Rhabdomyomata are less malignant than carcinomata and gastrotomy might prolong life indefinitely.

Poisoning from Application of Carbolic Acid Solution to the Skin.—Dr. J. W. Wainwright (*Boston Med. and Surg. Jour.*, April 3, p. 361).—A man, aged 50, was in the habit of using a 2 per cent. solution of carbolic acid as an application for pruritus. It gave temporary relief without ill results. One day at noon,

after taking a hot bath, he used a 4 per cent. solution. He applied it to the abdomen, thighs, and lumbar region with the usual relief. At 7.30 next morning while dressing he suddenly felt a peculiar pain which he referred to the bladder. It increased and radiated through the abdomen. He could not finish his toilet and sent for a medical man who injected $\frac{1}{2}$ gr. of morphine. The pain was not relieved, and the dose was repeated in half an hour. There were frequent rigors, each of which lasted a few minutes, profuse cold perspiration, vertigo, vomiting, and a desire to defecate. The eyes were prominent and fixed. After $1\frac{1}{2}$ hours another $\frac{1}{2}$ gr. of morphine was injected. The vertigo increased and there was paresis of the lower limbs. No urine was secreted for 18 hours. Appendicitis, renal calculus, and ptomaine poisoning suggested themselves. Relief from pain began about 4 hours after the onset. Half an hour later the patient became drowsy and would doze for a few minutes to be awakened by the recurring pains. The pulse was frequent and at times barely perceptible, the skin was moist and cold. At midnight the patient was comparatively comfortable. The urine showed the characteristic smoky appearance of carboloria. For 3 days there were great depression and evidence of acute nephritis. Recovery took place in 10 days.

See also "Coma from Application of Carbolic Compresses to the Skin." "REVIEW," Vol. IV., p. 509.

Myopathy from Mercurial Poisoning.—M. Touche (*Bulletins de la Soc. des Hopitaux*, p. 87, Feb. 1902).—A furrier, aged 51, during his work of scouring skins with mercurial salts, suddenly lost consciousness. For two days his lower limbs were paralysed. Motor power gradually reappeared, but 6 months later there was still considerable paresis. This condition was frequent amongst his fellow-workmen. Four years later, a similar attack occurred, and

was followed by increased muscular weakness. In Sept., 1898, the hypothenar and thenar eminences were atrophied. The thoracic, arm and thigh muscles were wasted, but their condition was masked by much subcutaneous fat. The calf muscles were the seat of pseudo-hypertrophic paralysis. These conditions were confirmed by a subsequent microscopic examination. The nerve fibres shewed only slight disintegration. The anterior cornual cells were vacuolated, and surrounded by dilated blood-vessels. In July, 1900, death occurred suddenly. There were no visceral lesions to account for it. The muscular atrophy was undoubtedly due to mercurial toxication. The apoplectiform nature of the nervous attacks was remarkable. The presence of simple muscular atrophy, concealed by adipose overgrowth, and the typical pseudo-hypertrophic paralysis is certainly noteworthy.

Belladonna Poisoning from application of an Ointment.—Variot et Dufestel (*Bulletins de la Soc. Méd. des Hôpitaux*, p. 90, Feb., 1902).—A boy, aged 7½, during the course of an intestinal affection, was attacked by articular rheumatism and swelling of all the principal joints. 15 gr. of sodium salicylate were given daily and an ointment containing salicylic acid prescribed. Its continuous application caused excoriation and pain, so it was replaced by a belladonna ointment. When the latter had been used 24-48 hours, the child was suddenly convulsed and lost consciousness. In spite of treatment with pilocarpine, artificial serum, etc., the intoxication progressed until motor paralysis of the legs appeared. Recovery was not established until 2 months later.

The point of interest in the case lies in the rapidity and intensity of the intoxication. After the application of salicylic acid the epidermis is softened, absorption is very rapid, and it is not advisable to allow belladonna ointment to be rubbed into the skin. A similar case is reported

in the *Lancet*, Oct. 16, 1901. Whisky, "Jacob's oil," and a belladonna plaster were successfully applied to the joint of a young girl. Absorption was rapidly followed by symptoms of belladonna poisoning.

Partial Cretinism: Swelling of the Thyroid on Cessation of Thyroid Treatment.—F. J. Poynton, M.D., M.R.C.P. (*Brit. Med. Jour.*, May 10, p. 1143).—Some cases of simple goitre improve under thyroid treatment and relapse on its cessation. Hence they must be allied to cretinism. The two following cases may supply a link in the chain of evidence.

CASE 1.—A girl, aged 8½, had been under treatment for partial cretinism for 4½ years. Though backward, latterly she would not have been recognised as a cretin. She contracted diphtheria, and the thyroid treatment was omitted for 5 weeks. She became duller and slower in speech, and the tongue and neck swelled. There was a slight swelling of the entire thyroid gland, which at once subsided on renewal of the treatment.

CASE 2.—A girl, aged 8, who had been under observation for 5½ years for partial cretinism, was undergoing thyroid treatment. All cretinous symptoms had disappeared, and it was thought possible that the thyroid gland might have developed with the growth of the child. With caution the dose was diminished and finally no thyroid was given. Two months later she was brought with the history that she had become a little dull and rather slow in speech and that a large swelling had appeared in the neck. Again, without knowledge of the previous history the diagnosis of cretinism probably would not have been made. The thyroid swelling was very definite and formed an obvious goitre. Both lobes were equally affected. The goitre rapidly disappeared under treatment.

These two cases should encourage use of the thyroid extract, especially in cases in which iodine might be used in preference. In both the

diagnosis of simple goitre would probably have been made had not the history been known. Possibly some other cases of simple goitre show slight symptoms of cretinism which are overlooked.

Latent Syphilitic Aortitis and Visceral Neuralgia.—Dr. Louis Renon (*Journal des Praticiens*, Jan. 25, p. 51).—Syphilitic aortitis is rarely manifested by painful visceral crises, like violent renal or biliary colic. The following is an example:—

A man, aged 40, consulted the writer on April 27 for terrible pains of 3 months' duration, for which various methods of treatment had proved useless and ineffectual. The pains resembled those of renal or hepatic colic. They occupied the lumbar region and radiated downwards to the upper part of the thighs; in the hepatic region they were near the false ribs and shot upwards to the right shoulder. The mammary region was painful on both sides, but less so than the hepatic and renal. The pain was tolerable in the morning, increased in the afternoon, and excruciating during the night.

There had been severe dyspnoea for a month. Signs of aortic insufficiency were present. It thus appeared that the aortic lesion was related to the visceral pains and that possibly an aneurysm or aneurysms were present. The latter were searched for, both in the usual way and by radiography, but without success. There was certainly aortitis. At 20 the patient had syphilis. Mercuric iodide was prescribed and the pains diminished in 10 days and finally disappeared.

Eberth's Bacilli in the Typhoid Eruption.—Polacco and Gemelli (*Centralbl. f. Inn. Med.*, Feb. 1, p. 121).—In doubtful cases of typhoid fever the rose spots should be examined for the

presence of typhoid bacilli. The writers have found them in every one of 50 cases examined, and attribute the negative results of others to faulty technique. Some of the tissue of the rose spots should be transferred to a liquid culture medium. The number of bacilli in each spot is too small for growth to be obtained on solid media. If "Maréchal's vaccinostyle" is used the process is practically painless. In broth a copious growth appears 12 to 16 hours after inoculation. Two or more spots should be examined. The method is especially valuable in cases in which Widal's reaction is delayed, or in which facilities for the complicated bacteriological examination of fæces are absent. The writers found bacilli in the spots in several cases before Widal's reaction appeared, and claim that they are present in every case.

See also "REVIEW," Vol. III., p. 221 and Vol. V., p. 165.

Lead Poisoning in the Manufacture of Artificial Pearls.—E. Gaucher and Henry Bernard (*Presse Médicale*, Feb., p. 183).—The writers have recently seen several cases of lead poisoning in makers of artificial pearls. A man, age 19, was seen with lead colic of 3 days' duration. He had the usual symptoms, including a well-marked blue line on the gums. A search for the cause elicited the fact that he was a polisher of false pearls. The pearls are burnished on a steel wheel, and during the process the air is filled with dust. Shortly afterwards another workman came from the same factory with similar symptoms. The writers obtained a number of the false pearls. They were made by a secret process discovered in 1898. A chemical analysis showed them to contain a salt of lead—probably a silicate. Only the polishers of the pearls suffered from lead poisoning, the fine dust produced in the process finding its way into the lungs and stomach.

THERAPEUTICS.

Injections of Air in the Treatment of Neuralgia.—R. Romme (*Presse Médicale*, May 28, p. 511).—Subcutaneous injections of air in the treatment of different forms of neuralgia were first employed by Cordier. He thought that by injection of air under the skin the terminal filaments of the nerves were stretched and that relief was given as in nerve stretching for sciatica. He found by experiments on animals, on himself, and on patients that the injections were harmless, and produced, in a large number of cases, excellent results.

For this treatment a hollow needle, such as is used for ordinary hypodermic injections, and a pump, such as is used in a Potain's aspirator, are necessary. A rubber bag of known capacity may be used to gauge the quantity of air injected. As a rule a quarter to half a litre is sufficient. To prevent the entrance of germs a glass tube plugged with cotton-wool and covered at each end by perforated india-rubber caps may be introduced between the needle and the air-pump. But Cordier has frequently dispensed with this filter without untoward results. The needle, the skin of the patient, and the fingers of the operator should all be aseptic. The needle is introduced under the skin near the affected part, and after a brief interval, to make sure that it has not penetrated a blood-vessel, insufflation is commenced. Only slight pressure is required to make the air pass into the subcutaneous tissue. When the insufflation begins the skin is lifted up as by a lipoma, and the gaseous tumour spreads farther and farther. At first the elevated skin grows pale, then it reddens, and it remains red for some hours. The injection is painless, and the patients only complain of distension, formication, itching, or numbness.

The injection of air is only the first step in the treatment. When the needle is withdrawn the

distended area should be vigorously massaged. The object of this is to concentrate the air at the points at which it is necessary to produce the greatest distension. The massage has a much greater effect than simple insufflation, for it causes the stretching of the nerve filaments which is desired.

CASE 1.—A man had an extensive herpes on the right arm and the scapular region. Severe pain remained even 3 weeks after the eruption had disappeared. A single injection of 50 centilitres of air abolished it, though neither quinine, antipyrin, liniments, nor blisters had had the slightest effect.

In 25 cases of sciatica treated by subcutaneous injections of air M. Cordier had only 2 failures. Many patients came in such pain to the hospital that they expected to become in-patients. After the first injection the improvement was often so great that they returned home, to come again occasionally on return of the pain. As a rule a complete cure was effected by 4 or 5 injections made at intervals of 5 or 6 days. In treating sciatica the air should be injected at three points at a sitting, viz., the lumbar region, the external aspect of the thigh, and the upper and outer aspect of the leg. At each point 50 centilitres of air should be injected. It should be directed towards the most painful zones and kneaded with the hands, so that it may effectively stretch the fine nerve terminations.

The injections give great relief in the cutaneous femoral neuralgia which sometimes complicates metritis and inflammations of the adnexa in women, and gonorrhœa and epididymitis in men. An injection of 25 centilitres into the outer aspect of the thigh almost invariably gives immediate relief, and is much more efficacious than soothing liniments or blisters. Lumbago may be cured by a single injection of air into the subcutaneous tissue and muscles of

the sacro-lumbar region. In neuritis from contusions, dislocations, or fractures, accompanied by muscular atrophy, and often treated unsuccessfully by friction, massage, and electricity, insufflation of air frequently gives striking results.

CASE 2.—A man with a dislocation of the shoulder joint had, 2 months after the dislocation was reduced, great pain, which was increased on the slightest movement. A first injection gave great relief. A second and third, made at intervals of 5 days, caused disappearance of the pain and rendered movement almost impossible. After 2 months the atrophy had almost disappeared, and all the functions of the limb could be performed.

The results are more uncertain in ascending neuritis of traumatic origin. The injections are very effectual in the painful affections of the joints or tendons in gonorrhœa.

Treatment of Sciatica by Gaseous Injections.—Dr. Paul Vigne (*Journ. de Méd. et de Chirurg. Pratiq.*, March 25, p. 224).—The object is to act not on the nerve trunk, but on its terminations, by the sudden distension of the meshes of connective tissue. Injections of carbonic acid, hydrogen, and air were tried; the last gave the same results as the others. The requirements are the needle of a Pravaz syringe and the ball of a Pacquelin's cautery. To purify the injected air a piece of glass tubing containing a plug of sterilised cotton wool is interposed between the needle and the india-rubber tube. The points selected for puncture are the specially painful spots. The best results have been obtained by injecting with antiseptic precautions at each point about $\frac{3}{4}$ of a litre of air. The skin is pinched up and the needle is introduced alone into the cellular tissue, taking care not to adjust the rubber tube till it is certain there is no hæmorrhage and that a superficial bloodvessel has not been penetrated. Subcutaneous emphysema is immediately produced around the puncture, and

there is a feeling of tension but not of pain. Massage should then be employed. It not only distributes the gaseous mass to all the painful points, but makes it penetrate to the most delicate expansions of the connective tissue which accompany the finest nerve terminations. The absorption of the gaseous injection is usually complete in 6 or 7 days, when a fresh injection may be given if cure has not been obtained.

The advantages of the gaseous over watery injections are the painlessness and the rapid absorption. In certain cases, almost always in acute sciatica or lumbago, the effect is instantaneous and definite. In old sciatica remarkable improvement is usually obtained, and often complete recovery follows 3 or 4 injections.

Treatment of Atrophic Rhinitis by Interstitial Injections of Paraffin.—By A. Druault (*Presse Méd.*, June 7th, p. 547).

Atrophic coryza with accompanying ozæna is most intractable to treatment. The aim should be (a) the permanent diminution of the calibre of the nasal fossæ and (b) modification of the glandular secretion. By altering or destroying the mucous glands the formation of those oily drops which dry and form crusts is prevented, while the ozæna, which is directly due to the stagnation of incrustated secretion in the retracted fossæ, is also cured.

The writer has tried Eckstein's method of paraffin injection in 10 cases. A paraffin which melts only at 60° is used; it solidifies almost at once, is not re-absorbed, and is readily tolerated by the tissues. At the first operation 2 or 3 c.c. of paraffin are injected under the mucous membrane at the posterior part of both inferior meatuses. A few days later the same process is performed at the anterior part. A syringe with a long needle (preferably a curved Potain's needle) is used. The paraffin is heated to 65-70°. Cure resulted in those cases in which the meatuses were successfully re-constructed. They then remained somewhat

swollen giving the impression of slight hypertrophic rhinitis. The ozæna disappeared immediately, and no painful sensations were complained of except in 2 cases in which phlebitis of the facial vein followed. The writer believes this was due to too large a quantity of paraffin having been injected at one time. All other treatment was stopped during the experiments. Though the permanency of the results cannot at present be guaranteed the method promises to be useful in a large number of cases.

The Antithyroidin Treatment of Graves' Disease.—Dr. Schultes (*Münch. Med. Woch.*, May 20, p. 834).—The theories that the secretion of the thyroid gland normally neutralises some toxic substance produced in the body, and that exophthalmic goitre is due to an intoxication from over-production of the normal thyroid secretion (thyroidin) led Ballet and Enriquez to treat Graves' disease by the injection of blood-serum of thyroidectomised dogs. More recently Möbius successfully employed the serum of thyroidectomised sheep, which is prepared and sold by Merck of Darmstadt under the name of "antithyroidin."

A woman, aged 49, who was married and had 5 children, was admitted to hospital with acute mania on Dec. 12, 1901. Four years before she had attacks of palpitation, and for 3½ years her husband had noticed that her eyes were enlarging. Since the onset of the menopause 3 years previously the neck had increased in size. For 3 months before admission her condition had rapidly deteriorated. The palpitation was so severe that she could not lie on the left side and the heart-beats were felt in the head and arms. Tremors had developed in the hands with general uncertainty in all movements. In Nov. ideas of persecution developed, and on Dec. 12 she had a sudden attack of acute mania, and could not recognise her husband.

The eyes were prominent and showed a wide strip of sclerotic between the cornea and

the lids. Stellwag's and Gräfe's signs were present. The thorax was ill-developed and expanded badly (Bryson's sign). The cardiac dulness was increased to the left, and the apex beat was heaving and could be felt over the entire left side of the thorax and in the epigastrium. The pulse was hard, small, and 140. Sensation and the reflexes were normal. The urine contained no albumin or sugar. The neck appeared wider than the face and measured 44 cm. in circumference. There was a tough goitre which contained numerous stony-hard nodules of the size of a walnut.

On Dec. 21 3 doses of 0.5 gm. of Merck's antithyroidin were given. This amount was increased every day until 4.5 gm. were taken thrice a day, at first in sherry, later in raspberry juice. After a week the patient was more composed. On Jan. 5, 1902, she recognised her surroundings and wished to go home. A few days later there were cough with mucous expectoration and great thirst. On Jan. 14, the twenty-fourth day of treatment and the thirty-third of the maniacal attack, the mental condition was normal. The palpitation had disappeared, the pulse was 100, and she could lie on the left side in comfort. She remembered nothing of the events of the last few weeks. On Jan. 29 the circumference of the neck was only 42 cm., and the goitre with the exception of a few hard nodules had become uniformly soft. The tremors in the hands had disappeared, and she was again able to do needle-work. The pulse was 88. The dose of serum was then slowly decreased until on Jan. 23 the treatment was discontinued. On Jan. 31 the pulse had risen to 112, and the circumference of the neck to 43 cm., though the general improvement was unimpaired. On Feb. 1, 2.0 gm. of serum were given 3 times a day. On Feb. 7 the circumference of the neck had again decreased to 42 cm., and the pulse had fallen to 90. The patient was discharged.

Though further trial of the treatment is necessary before conclusions as to its value are

justifiable the rapid improvement in the mental condition, which coincided with a shrinking and alteration in consistence of the goitre, diminution in the pulse-rate, and disappearance of tremors suggest cause and effect. The exophthalmos was unaffected. Except for increased thirst no unpleasant by-effect was noted. Probably the dose of antithyroidin might be advantageously increased. The treatment is very expensive.

The Treatment of Graves' Disease with the Milk of Thyroidectomised Goats.—Dr. Goebel (*Munch. Med. Woch.*, May 20, p. 835).—In 1899, Lanz (*Neur. Centralbl.*, No. 22, 1901), guided as were Ballet, Enriquez, and Möbius, by the theory that substances would probably be formed in the bodies of thyroidectomised animals which would fix or neutralise the toxin of Graves' disease, treated several cases with the milk of thyroidectomised sheep. Milk is probably less active than Merck's antithyroid-serum, but has the advantage of cheapness. Dr. Goebel, independently of Lanz, employed the same treatment, but on different grounds. If Graves' disease is an intoxication by thyroid hypersecretion, that is, by thyroïdin, this could probably be prevented by excluding iodine from the diet, for that contained in thyroïdin, must be derived from the food. But as the thyroid gland is the only organ, which produces a compound of iodine, the milk of an animal with no thyroid should contain no organic iodine. A patient, therefore, with Graves' disease, who is fed exclusively on the milk of a thyroidectomised animal would receive too little iodine for an overproduction of thyroïdin to be possible.

A single woman, aged about 36, had had exophthalmic goitre for 9 years. There was a family history of neuroses. In 1900 her life was despaired of, but she improved somewhat and came under the writer's care in May 1901. All the classical symptoms—exophthalmos, goitre, an irregular pulse of 120 with normal

cardiac dulness, Gräfe's, Stellwag's, and Möbius's signs, tremors of the fingers, patches of cutaneous pigmentation, a tendency to bleed after trivial injuries, flushes of heat, pain in the back, thirst, and rapid emaciation—were present. The circumference of the neck was 33 cm. The goitre contained hard nodules of the size of a hazel nut. She could walk only for a few minutes. Her diet was then restricted to the milk of a goat, aged 2 years which had been thyroidectomised 5 months before. The operation had not been followed by cachexia strumipriva. The quantity is not stated, but the patient appears to have drunk daily all the milk obtainable. Improvement was soon apparent. The exophthalmos diminished, the cervical circumference decreased by 2 cm., the weight increased by 8 lb., the pulse fell to 88 or 90 and became regular, the hard nodules in the thyroid gland disappeared, and in a few weeks the patient was able to go about. This treatment was combined with galvanism of the sympathetic, massage of the thyroid gland, and the administration of arsenic, so that it is doubtful whether the result should be attributed solely to the iodine-free diet. The case is suggestive but not conclusive.

Prophylactic Injections of Antitoxin.—

M. Netter (*Presse Médicale*, April 23, p. 387) reports his results obtained in 1901 from prophylactic injection of antitoxin into the brothers and sisters of children admitted into his wards with diphtheria. In many cases isolation of the invalid is impossible, and frequently the persons in contact with a diphtheritic patient have the bacillus of Löffler in their throats. They are therefore very liable to contract the disease, and even though they do not contract it they may transmit it. Of 546 children of families in which there was a case of diphtheria 157, or more than one fourth, had the organism in their throats; of 30 adults examined (father, mother, and nurse) 13 had the bacillus in their

throats. Further, convalescents may infect others, for the organism lingers long in the air passages, and no patient should be discharged from hospital so long as the bacillus can be found in the throat. Fourteen children admitted to the writer's wards contracted the disease from convalescents who had been discharged prematurely. Sometimes the parents insist in removing their children after 5 to 8 days, whereas they should remain from 20 to 40 days. In the Paris epidemic of 1901 the probability of infection of the children in a family in which one case occurred was 34.5 per cent. This figure was derived from cases in which rigorous isolation was practised from the earliest possible date.

When prophylactic injections are given to children in good health, complications such as eruptions, articular pains, and febrile reaction are infrequent. Of course the dose for prevention is less than that for cure. In more than 2,500 cases in which the writer employed preventive injections there was not a single serious symptom. In some cases diphtheria occurred in spite of the injections. Failures occurred from 2 causes: At first the injections used were too feeble—5, 10, 20, 50, and 100 units. Further experience showed that the dose should be from 250 to 500 units, and in his later cases Netter injected as much as 1,000 units. Even with such doses infection sometimes followed, for antitoxin confers only a temporary immunity which is not established immediately. As a rule immunity is acquired at the end of 24 hours after the injection, and lasts 28 days. This fact is most important, for in 81.7 per cent. of the writer's cases the disease developed between the 2nd and 28th day from the time of contagion. All children who have been exposed to contagion should be inoculated whether the bacillus can be found in their throat or not. On two occasions patients in whose throats the bacillus could not be found came back to hospital a few days later with diphtheria. From March to Dec.

1901, the writer inoculated 502 children belonging to 251 families in which there had been one case of diphtheria. Of these children 13 or 2.59 per cent. contracted the disease. In 7 of them diphtheria appeared less than 24 hours after the injection; in 6 more than 28 days afterwards. No case occurred during the interval, for inoculation confers absolute immunity during this period.

The histories of the 13 children who developed diphtheria in spite of the inoculation present some interesting features. In 2 cases the disease affected the naso-pharynx; the bacilli were found, but the local lesions were slight, consisting of an herpetic eruption in one case, and little white points in the other. In 4 cases the membrane was confined to the tonsils, and disappeared in 3 or 4 days; in 2 cases only 1 tonsil was affected. In 2 cases both were affected. Clinically the cases were extremely slight. In 1 case the nose was affected. It was of moderate severity and terminated favourably. When the disease developed more than 28 days after inoculation it also ran a mild course. In a child who developed the disease 33 days after inoculation the little white streaks on both tonsils, in which the bacillus was found, disappeared in 24 hours. Equally rapid disappearance occurred in a case which showed the disease on the 58th day. Two slight cases occurred on the 84th and 56th days. Two cases of moderate severity occurred on the 38th day. MM. Bourges and Bergeron examined the throats of 476 of the children bacteriologically, and found Löffler's bacillus in 150. This shows the number particularly exposed to the risk of contracting the disease. The writer knows of 5 cases which occurred in the non-inoculated members (particularly the parents) of these families.

The writer makes important deductions from a comparison of the spread of the disease among children exposed to infection who had not been inoculated, and the immunity of the inoculated children. Both groups belonged to the same class, lived in

the same quarters, and were observed during the same epidemic. The chances of contamination were the same, as in every family at least one case of diphtheria had occurred. There was one point in favour of the non-inoculated children; only 10 per cent. had the bacillus of Löffler in their throats, while 31.5 per cent. of the inoculated children had. Probably the inoculated children were more exposed to infection, for the parents naturally thought that children who had shared the bed of one who had contracted diphtheria ran a greater risk, and therefore brought them at once for inoculation. Among non-inoculated children there were 87 secondary cases in 69 families. The deaths in these numbered 18. There were 20 severe but not fatal cases, 18 moderately severe and 19 mild cases. The proportion of secondary cases was 17.72 per cent. of children exposed, and 34.5 per cent. of families exposed. The severe cases represented 7.74, and the fatal ones 3.65 per cent. of the children exposed. If the children inoculated had been affected in the same proportion there would have been among them 89 children, scattered among 86 families. The following table gives the difference brought about by inoculation.

	Inoculated	If Non-inoculated would have been		Difference
Families affected	13	...	86	.. 73
Children affected	13	...	89	... 76
Severe cases ...	0	...	39	... 39
Fatal cases ...	0	..	18	... 18

Among the non-inoculated 8 cases occurred within 24 hours of exposure to infection, and 7 cases after 28 days. These figures closely correspond with those of the inoculated children. But whereas among the latter no case occurred between the 2nd and the 28th day, there were 71 cases among the unprotected.

Preventive inoculation has not only a prophylactic influence, but exercises also an attenuating influence on the disease in those who, in spite of inoculation, contract it. Of the 7 cases which developed the disease within 24 hours of inocula-

tion 2 were insignificant, 4 were slight, and 1 was moderate. Of the 8 non-inoculated cases in which the disease was contracted within the same period 2 were slight, 2 were moderate, 2 were severe but ended in recovery, and 2 were fatal. Of the inoculated cases which developed the disease after the 28th day, 2 were trivial, 2 were slight, 2 were of medium severity. Of the non-inoculated cases which showed the disease after the 28th day, 1 case was slight, 4 cases were moderate, and 2 cases were fatal.

The most important features in prophylactic inoculation against diphtheria are therefore (1) the rapid immunity conferred (2) the absolute-ness of that immunity from the 2nd to the 28th day (3) the marked attenuation of the virus in those attacked after inoculation, and (4) the trifling inconvenience of inoculation.

Adrenal Substance in the Intestinal Hæmorrhage of Typhoid Fever.—Warren Coleman, M.D., (*Med. News*, March 29, p. 597) has treated 5 cases of intestinal hæmorrhage in typhoid fever with adrenal substance. Four of the patients recovered, though 2 of them had severe hæmorrhage. The fifth patient died of exhaustion several days later, and not of hæmorrhage.

CASE 1.—A man, aged 27, had severe hæmorrhage early in the evening and lost from 3 to 4 pints of blood. He was immediately given 15 gr. of adrenal substance and the dose was repeated every hour during the night. There were slight hæmorrhages at intervals of 1 or 2 hours in the night. An ice-coil was kept on the abdomen. Next day 15 gr. of adrenal substance were given thrice. No further hæmorrhages occurred.

CASE 2.—A woman, aged 43, had severe intestinal hæmorrhage. Fifteen gr. of adrenal substance were given every 2 hours during the day and every 4 hours during the night. Next day the stools were tinged with blood and adrenal substance was given in 15 gr. doses thrice. On the third day only faint streaks of blood were present in

the stools, and treatment was continued in the same manner. No further hæmorrhage occurred.

In a case of typhoid fever the writer orders 5-gr. powders to be kept in the sick-room and gives instructions to the nurse to administer 1 powder on the first sign of blood in the stools, repeating the dose every hour until he arrives. If the patient is conscious the powder may be placed on the tongue, chewed a little, and swallowed with a little water. If he is not conscious the powder may be given in suspension in water or in a little milk. Occasionally the first dose produces slight nausea. The powder may then be given by the rectum, if the diarrhœa is not too frequent, and the dose may be repeated every hour or two. If neither the stomach nor rectum will tolerate the drug 2 or 3 gr. may be given by intravenous injection.

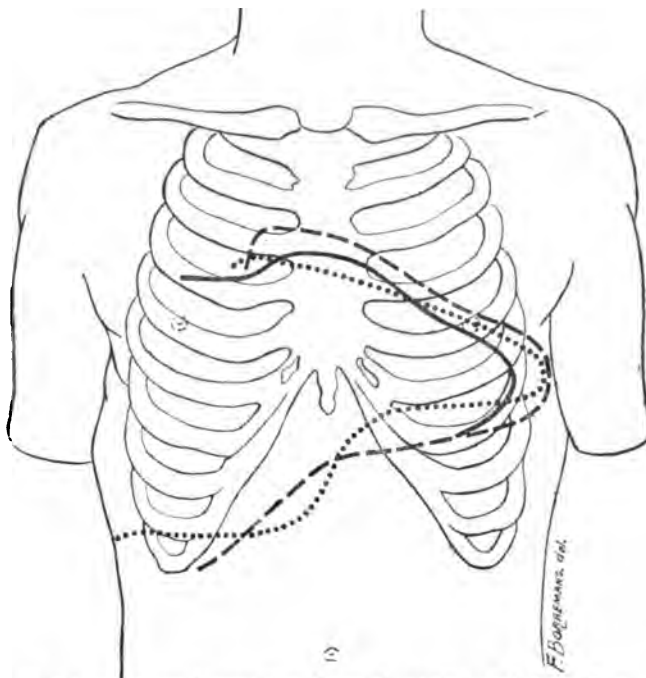


Fig 1.—The continuous line shows the cardiac dulness before the administration of digitaline; the interrupted line after its administration; the dotted line after surgical evacuation of the œdema.

Dangers of Digitalis in Cardiac Dilatation.—M. Pierre Merklen (*Bulletins de la Soc. Méd. des Hôp.*, p. 315, 1902).—A study of the bigeminal pulse leads to many interesting questions. It appears to depend principally on the association of marked cardiac dilatation with mitral or tricuspid insufficiency. The writer believes that such conditions are aggravated by the use of digitalis, which increases the force and regularity of the heart without producing diuresis. The slowing of the heart beat permits greater dilatation in the longer diastole, and the systolic increase is insufficient to empty the ventricles. Such distension contributes to the production of the bigeminal pulse.

CASE 1.—A man had acute rheumatism at the age of 14. At 24 he complained of dyspnœa on exertion and "bilious" attacks. He was a gourmand and a drunkard. On admission to hospital on Feb. 12, 1902, marked cardiac hypertrophy and dilatation were found. (Fig. 1).

There were pulsations over the entire precordial region and systolic depression in the epigastrium. Intra- and extra-pericardial adhesions were diagnosed. There were the murmurs of aortic, mitral, and tricuspid insufficiency. The liver was enlarged, tender, and the seat of frequent irregular lancinating pains. Perihepatitis and pericardio-hepatic adhesions were suspected. Only 500 c.c. of urine were passed daily. Whilst on a milk diet and theobromine an hepatic crisis occurred. The temperature was 103.3°, and there were vomiting and intense pain. Pleuro-broncho-pneumonia was present at the base of the right lung, and the sputum was purulent and frequently sanguino-purulent. Progressive dropsy appeared and rapidly involved the lower limbs and abdominal wall. The pulse was irregular, intermittent, and rapid.

One milligram of digitaline was given on Feb. 19th and 21st. On the 20th the urine amounted to 1000 c.c., but on the following days it fell to 250 c.c., and finally remained at 300 to 500 c.c.

Fig. 2.



Before digitaline.



After digitaline. Pulsus bigeminus.

This diminution coincided with increased cardiac dulness and double rhythm. The pulse gave only 54 regular pulsations, but auscultation demonstrated abortive pulsations following the principal systole. The patient grew worse, and the stomach became intolerant of milk and medicaments. The increased dilatation and double rhythm continued for 3 weeks after the administration of digitaline. As the œdema became more pronounced and there were considerable jaundice and pyrexia incisions were made in the lower limbs. An abundant flow of bile-tinted fluid resulted, the œdema diminished, and the vomiting and hepatic pains disappeared. The cardiac dulness diminished 3 cm. in height, and the double rhythm disappeared. Unfortunately the urine continued scanty and the broncho-pneumonia extended. Twelve days later the œdema and dyspnoea returned, and as the heart became very rapid and irregular, $\frac{1}{4}$ mgm. of digitaline was given. The following morning the patient was found dead in his bed.

CASE 2.—A woman, aged 40, with a rheumatic history, was admitted to hospital on Feb. 6. The heart was very dilated and systolic murmurs were heard over the mitral and tricuspid areas. The pulse was small and the sphygmogram shewed an almost horizontal line. (Fig. 2). The jugular vein pulsated and there were marked pulmonary œdema and scanty, albuminous urine. One mgm. each of digitaline and theobromine were given. Forty-

eight hours later the patient was worse, the cardiac dulness was increased, the pulse had become bigeminal, and diuresis had not commenced. Subcutaneous incisions were practised, the œdema was relieved, and the urinary flow re-established. The improvement was not, however, sustained and the patient died 9 days later.

CASE 3.—A woman, aged 51, complained of increasing dyspnoea. The pulse was 48 and regular but bigeminal. There were mitral and tricuspid incompetence. The heart was enormously dilated. For a month digitaline and theobromine had been used with little effect upon the urinary secretion. The former always evoked "palpitation." Five days later, after strophanthus, theobromine, and calomel had been found ineffectual, 1 mgm. of digitaline was again given. No diuresis resulted, but the cardiac beat was more pronounced. Ten days later the patient died suddenly.

These 3 cases present similar features—irreducible cardiac dilatation associated with mitral and tricuspid incompetence, regulating action of digitalis on the cardiac contractions without diuresis, increased dilatation of the heart, and early appearance of the bigeminal pulse. In some cases digitalis produces diuresis without slowing the cardiac contractions, in others it causes marked slowing and consequently favours increased dilatation during diastole. Whether this action alone explains the diminished diuresis

is not clear; certainly in Cases 1 and 2 the kidneys were somewhat impermeable from chronic and acute nephritis. The action of the digitalis is probably intensified by that of bile constituents, as icterus is common in these advanced cardiac cases. Digitalis is therefore dangerous in marked cardiac dilatation, and the appearance of the "pulsus bigeminus" at once contraindicates its use. The only treatment then available is theobromine combined with purgatives. When dropsy increases, subcutaneous incisions, although they do not save life, mitigate the patient's sufferings.

Uses of Chinosol.—Fr. Kipp (*Allgem. Medicin. Central Zeitung*, April, p. 312) has used chinisol with great advantage in many conditions. He injected a 1 per cent. solution into two carbuncles from which he was suffering, and obtained immediate relief. On the appearance of a sensitive and thickened spot on the skin (the possible forerunner of another boil) he made a further injection, and no boil developed. The same treatment was equally successful in another case. He has used chinisol in phthisis combined with guaiacol carbonate and codeia. Mixed with cocaine and made into a pessary he has found it of much use in uterine catarrh. A young woman with phthisis developed a lupoid ulcer on the upper lip. Chinisol was injected and it healed rapidly with a smooth scar. Several cases of nasal lupus were treated, and in all the swelling of the mucous membrane rapidly disappeared, to the great relief of the patient. Cases of phthisis have also been much benefited by the hypodermic injection of chinisol. Malignant pustule may be cured by a

single injection. The writer mixes his solution of morphia for hypodermic injection with 1 in 500 of chinisol, and has never seen an abscess follow an injection. The human skin is sensitive to stronger solutions of chinisol, even 1 in 500 producing redness and some sensitiveness. But solutions of 1 in 100, injected into the subcutaneous tissues are well borne, even in such large quantities as 2 to 9 cgm. The writer knows no remedy that gives such rapid and good results in all septic conditions. He uses the solution in strengths which vary from 1 in 1000 to 1 in 100.

Bismutose in Diarrhoea.—Dr. Künkler (*Allgem. Medicin. Central Zeitung*, March, p. 276). —The writer highly recommends bismutose in the treatment of intestinal catarrh and diarrhoea, especially in infants. He gives it in water, albumin water or broth, several times daily, in doses of 1 gr. for children under a year, and in doses of 2 to 4 gr., 3 or 4 times daily, to older children. During administration he, of course, regulates the diet. The drug was borne uniformly well. It never caused vomiting, or other untoward symptom. In 1 to 3 days the thin, watery stools became firmer and of more natural colour. Vomiting ceased at once. It was rarely necessary to continue the administration of bismutose more than 3 or 4 days. After this the patient gradually returned to ordinary diet.

In the case of a child with diarrhoea of 14 days' duration, who could retain no food and was much reduced, the vomiting ceased in 2 days, and the stools became much firmer. The treatment was suspended for 2 days, and the serious symptoms returned; but on resuming the administration of bismutose once more the child rapidly recovered.

SURGERY.

Perforation of the Rectum into the Peritoneal Cavity.—G. R. Turner, F.R.C.S. (*Lancet*, May 24, p. 1464).—A youth, aged 17, was admitted to hospital on April 17, at 4.30 p.m. While trying to vault over a broomstick it passed into his rectum, tearing a hole in his trousers and causing much pain and hæmorrhage. On withdrawal the broomstick was covered with fæcal material for about two inches. He was taken to the hospital collapsed and suffering much pain. He was pale and shivering and vomited thrice. There was a tear of the anus about one inch posteriorly which passed up the posterior wall of the rectum for a short distance. The mucous membrane beyond was smooth and fæces were present some 3 in. from the anus. The examination was difficult and unsatisfactory owing to spasm and pain. About 10 p.m. he vomited again and there was much hypogastric pain. The abdomen was rigid on palpation, but moved well on respiration.

At 11.30 p.m., 8½ hours after the accident, an anæsthetic was given and a rectal examination in the lithotomy position was made. There was an extensive tear of the anterior wall of the rectum which passed through the rectovesical fold of the peritoneum into the general peritoneal cavity. A sound passed through the rent touched the anterior abdominal wall. There was also a wound of the rectum continuous with the tear of the anus posteriorly.

A 4-inch incision was made above the pubes. Fæcal matter and foul fluid were found in the peritoneal cavity. After much difficulty a transverse rent 2 in. long was found in the peritoneum between the bladder and the rectum, the serous coat being stripped off the posterior wall of the bladder. The examination was aided by an assistant's finger in the rectum. By pulling on the bladder and with the aid of long

clips the rent was brought sufficiently near the surface to admit of suture with catgut. This was effected by long curved needles on handles and a cleft-palate rectangular needle. The peritoneum was carefully cleaned by sponging both before and after suture of the rent and subsequently this situation was gently irrigated with warm water. The irrigation was not permitted to be more than local. A large glass drainage-tube was inserted and some strips of cyanide gauze were passed down to the peritoneal aspect of the rent. Another large tube was introduced into the rectum beyond the tear of the bowel.

On April 18th the patient was doing well. The wound was dressed; much serous fluid came away from the drainage-tube. On each of the two following days the wound was dressed. There was slight serous discharge and some of the gauze plugging was removed. On the 22nd the wound was dressed, all the gauze plugging was removed, the glass tube was withdrawn, and a smaller india-rubber tube was inserted. Nothing came away from the rectum. On the 24th he was made to lie on his face to facilitate drainage. On the 26th a little flatus was passed by the abdominal wound. On May 1st the tubes were removed. The bowels had not acted since the operation. He was given half an ounce of castor oil. On the 2nd about 1½ ounces of fæcal material came through the abdominal wound. On the 3rd more fæcal material flowed from the wound and a normal motion was passed by the bowel. On the 4th there was less discharge from the wound. The stitches were removed. On the 5th a normal motion was passed by the rectum. The wound was healing well. A slight but not foul, discharge came from the abdominal wound. On the 20th the wound had firmly healed and the patient was up and about. On the 30th the whole of

the rectum was found to be healed and the rectal wall was quite smooth all round.

Fæcal extravasation into the peritoneal cavity following perforation of the rectum is a rare condition and the writer knows of no case that has been successfully treated by laparotomy. Some years ago he operated in a case of perforation of the rectum and bladder by a branch of a tree. The patient was a boy who whilst climbing fell and staked himself. He was not seen until more than 12 hours after the accident and although the writer was able to sew up the bladder rent he found the small intestine also injured. The patient survived the operation about 24 hours. The writer attributes the recovery in the case related above mainly to the gauze packing and drainage and to the successful limitation of the contamination of the peritoneum to the parts immediately around the wound of the rectum. The suture of the rectal wound was very difficult. The stitches had to be put in as best one could and it was not at all certain that they were confined to the serous and muscular coats.

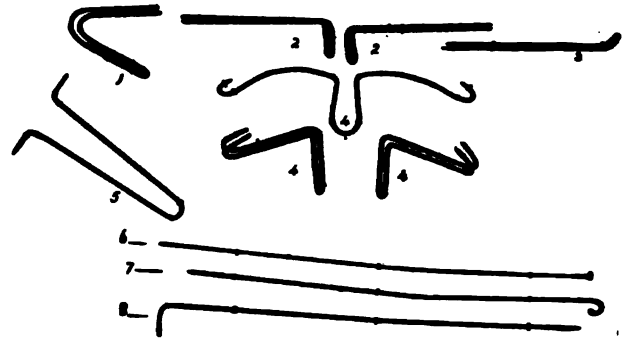
Surgical Uses of the Hair-Pin.—

J. Torrance Rugh, A.B., M.D. (*American Medicine*, April 5, p. 557).—Dr. M. Eberson, of Tarnow, has published a short article (the first of the kind) on some of the surgical uses of the hair-pin. (*Zeit. für Krankenpflege*, 1899, No. 1.) He mentions 9 uses, but there are numerous others. His list is included in the present paper, and his initial is placed after the uses he described. The hair-pin is useful because of its almost universal presence, its ease of sterilisation, convenience of size, and adaptability to any desired shape by bending or twisting. After use in an infectious case it may be thrown away, or by passage through a flame, it may be sterilised. Japanning or enameling is of no importance, as the coating can be removed by heating. Curved hair-pins may be easily straightened. The hair-pin may be used (1) in its natural form, (2) straightened, (3) bent or twisted into various shapes.

THE NATURAL FORM.—(1) To hold the hair away from the shoulders or neck during an operation. (2) To pin on dressings or bandages. (Dr. E.). For this purpose, unless the dressings or bandages are made of gauze, the points should be sharp, so that they will more easily penetrate. Lest the patient be injured by them, the points should be buried in the dressings or protected by a cork or other substance. For this purpose the hair-pin may readily be bent into the shape of a safety-pin. (3) To remove concretions or foreign bodies from any sinus, natural canal, or opening. (Dr. E.). The hair-pin can generally be passed over the object and there is but slight risk of injuring neighbouring structures, the rounded end being inserted. Prof. Orville Horwitz, of the Jefferson Medical College, suggests bending the rounded end on the flat to an angle of about 10° or 15° , which much facilitates removal of a body from a canal such as the urethra. As the hair-pin is introduced into the urethra it passes over the object, and when it is withdrawn, the compressor muscles close firmly on it and tend to hold the object in the loop between the prongs. (4) As a dull curet. (Dr. E.). For the removal of soft granulation-tissue, or any softened or broken-down material the hair-pin is as useful as any dull curet. If the granulations are deep in a sinus or cavity the pin may be used grasped in forceps. In many such cases dry gauze on a forceps is very satisfactory, but the hair-pin will be found slightly more effective for isolated masses of the tissue. (5) As an esthesiometer. In the absence of a regular esthesiometer the points of a hair-pin may be set close or wide and the sensitiveness of a part determined, the separation of the points being measured by the eye or a rule. One point may be made sharp, and the other dull to further determine the tactile sense. (6) To catheterise a female. If the case is urgent and a catheter is not at hand the female bladder may easily be emptied by the insertion of the rounded end of the hairpin through the urethra, the pointed ends being firmly held to prevent the instrument from slipping into the

bladder. If the ends are bent slightly outward, the danger of such an accident will be obviated. (Fig. 5). (7) To run under a bloodvessel and with a figure-of-eight ligature or by twisting the ends make compression and arrest hæmorrhage (Dr. E.). (8) As calipers or compass. A short distance may be measured and the length accurately preserved by spreading the fork of the hair-pin to desired points. The rigidity of the steel wire will prevent alteration of the record by ordinary handling until it is transferred to paper or measured. In a child, the comparative thickness of such joints as the elbow, wrist, ankle, knee, etc., may be determined; by using a separate hair pin for each joint the comparison is made more accurately.

STRAIGHTENED.—(1) As a probe (Dr. E.). (2) As an applicator (Dr. E.). In the straightened form the hair-pin has doubtless been used much more extensively for probing sinuses or making applications than for any other purpose. It may be employed as a lacrymal probe or to explore any natural duct. The writer easily explored Stenson's duct with a hair-pin to determine the presence of a calculus. If silver nitrate, chromic acid or other caustic be fused upon it a satisfactory application may be made to a deep sinus or cavity. As a cotton carrier in nasal work it is equal to the regular one. (3) To wire the bones together in the resections or fractures. Silver or platinum wire is preferable for wiring the bones in a fracture or resection, but if such is not at hand iron wire may be used, just as formerly iron screws and nails were. In case it is used the spot at which the sutures are buried should be marked so that if they cause irritation or suppuration at some future time they may be easily removed under local anesthesia. The marking is best done with a knife, as a small scar is permanent while any other mark is not. (4) After sterilisation to rupture the membranes in labour. (5) As a cautery. When the crypts of the tonsil are



filled with exudation it may be advisable to enlarge the openings to allow free exit. The end of a hair-pin heated red in a flame may be passed into a crypt once or twice. The burned portion will slough out and leave a large opening. The same effect may be produced with the caustic applications mentioned. If the end is curled upon itself (Fig. 6) the heat will be retained longer, and the cauterization, therefore, more effective. This same form may be used as a urethral probe for a child; and in case of spasmodic retention of urine relief may be afforded by passing it into the bladder and so overcoming the spasm of the sphincter. In the same manner it may be used to sound a child for stone in the bladder. (6) As harelip pins. When cut into short lengths it serves admirably to approximate the edges of a wound, as in harelip, etc. (7) As a hook to abstract foreign bodies from canals and sinuses (Fig. 7). As said before the hair-pin is useful in removing foreign bodies from the nose, ear, etc., but sometimes it cannot be passed over or beyond the object to be extracted. Then one end may be bent into the shape of a hook of greater or less size, and this used to complete the work. (8) As a tenaculum (Fig. 8). If the hook is made large and the point is sharpened, there is a very fair tenaculum for emergency work.

BENT OR TWISTED.—(1) As a nasal speculum. A very good view of the interior of the nose may be obtained by inserting the free end of a hair-pin bent as shown (Fig. 1). The two ends are compressed in the same manner as the ordinary wire nasal speculum, and after being

inserted into the nostril are allowed to separate and so expose the interior. For the same purpose the pin may be bent as shown in Fig. 2, which form also suffices (2) for retractors for a wound or any of the natural openings,—eyelids, nose, lips, labia, etc. (Dr. E.). (3) As an aneurysm needle (Fig. 3). It may be used for drawing a ligature under a vessel, or around a pedicle, which in the course of an operation it has been found necessary to ligate. The edge is a little more blunt than that of the regular needle. (4) In lieu of a tracheotomy tube. (Dr. E.). No general practitioner knows when he may be called upon to perform tracheotomy to save life. One or two pins bent as shown in Fig. 4, and introduced into the tracheal wound, will suffice to maintain an opening until the proper tubes can be obtained. If the single one is used, tapes or strings attached to each end and securely tied at the side of the neck will retain it in place. If both pins are used (as shown), the tapes should be fastened in a similar manner, but care must be observed that the pins are well bent, otherwise they will slip out. A rubber tube or catheter may be substituted for these if desirable, but if not at hand they will suffice. (5) As a drainage tube (Fig. 5). The pin is bent in the manner indicated for catheterising the female, to prevent it from slipping into the bladder. It may be introduced as deeply as necessary and kept at the required depth by bending the prongs at the level of the skin. If two are introduced with their vertical plane at right angles, the sinus will be kept more open.

Conditions Simulating Cancer of the Breast.—Sir William Banks (*Liverpool Medico-Chirurg Jour.*, March, p. 157).—The most difficult condition to be sure of is chronic mastitis. Given a hard mass in the breast or a breast thickened like a cake with certain hard knobs in it, the question arises, Have these knobs become cancerous or not? If there is adhesion to the skin and a dotted pig-skin surface thereof the

condition is very suspicious; and if there are hard glands in the axilla be sure of cancer. The next thing most commonly mistaken for cancer is a small, chronic abscess with hardening around it, and then a small fibro-adenoma. Furthermore, a small, tight, simple cyst, is very like cancer. When in doubt put in a small trochar and make sure. In the same way, before removing a breast, when the patient is under chloroform, it is wise, even for the most experienced surgeon, to cut into the tumour if there is the least uncertainty. The method of examining the breast is of great importance. Sir James Paget showed that it ought to be examined from 3 points. First, the surgeon should stand behind the patient, steady on his feet, and she should be asked to press against him. To examine, say, the left breast, he should pass his left arm beneath her left armpit, and his right arm over her right shoulder. He thus can regulate to a nicety the pressure of his hands, and so make the best possible use of the sense of touch. In the second position the patient should sit in a chair, and the surgeon should examine the breast from the front. In the third position the patient should lie on her back on a sofa. In every one of these positions the surgeon will acquire a new appreciation of the tumour and gain help in a doubtful case.

Chronic interstitial mastitis is a very slow and painless inflammatory process of portions of or the whole of the gland. In the latter case the breast feels like a hard pancake, which can be lifted from the subjacent great pectoral muscle. The treatment is as follows:—Abolish stays. Bathe with hot water every night, and then rub in gently lin. potassii iodidi c. sapone one week, and ung. hydrarg. the next. Cover with a layer of cotton wadding, and wind fairly tightly round the thorax some half dozen turns of broad elastic webbing bandage. This procures support and pressure. Give steadily small doses of potassium iodide, which distinctly affect the mammæ as part of the generative system.

If the breast be cut across it feels dense and tough, while there are small hard nodules through it, and it is dotted all over with small points, which, with a glass, are seen to be minute cysts. If chronic mastitis is not checked it advances either towards cirrhosis or cancer. All forms of chronic mastitis should be regarded with suspicion. Of late the writer has advocated the removal of the breast when chronic mastitis does not yield to treatment, so as to anticipate the development of cancer. As the patients are usually past the childbearing period useful breasts are not sacrificed. The writer makes a semi-circular incision along the lower margin of the gland, and turns up the skin, including the nipple. The surface of the gland being laid bare, it can be felt all over and incised in any suspicious part. The eye and finger of an experienced surgeon will detect cancer more surely than any other means. If there is not enough to make certain that cancerous degeneration has taken place the breast alone need be removed, while the skin is brought back again. The presence of the nipple makes all the difference in the world between what a woman regards as disfigurement and not. If, on the other hand, a cancerous nodule or nodules be found the usual complete operation should be done.

See also "REVIEW," Vol. IV., p. 117.

Double Perforation of the Membrana Tympani from Lightning Stroke.—H. Macnaughton-Jones, M.D., F.R.C.S.I. (*Med. Press*, June 11, p. 625).—On Dec. 24th last, a soldier was sitting on the floor of his tent on blankets, drinking tea from an iron cup. A storm was passing at the time. He was not conscious of anything more until he found himself, as he expressed it, paralysed with the exception of his left arm. He thought that 2 hours elapsed from the time he was struck until he was found. He was revived with brandy and strychnine injections, and vomited freely. The hair on the left temple and on the pubes was burned. There

was an abrasion of the right breast, and a stripe about an inch and a half broad running down from this to the penis, from which it deflected over the right thigh, terminating in a mark like the cut of a whip. There were also burns on both shoulders over the scapula, and a small one behind the right shoulder. The hearing of the left ear was seriously affected.

The entire tympanic membrane was injected, and deep red. There were two perforations, one in the posterior superior quadrant and the other below the umbo. The watch was heard just off contact, and a whisper close to the ear. The most troublesome symptom was rather loud tinnitus. Some uneasiness and distress, hardly amounting to pain, were felt in the ear. Periodical applications were made of a weak solution of nitrate of silver to the membrane, the ear was protected with antiseptic gauze, and Lucas's inflator was used occasionally. At the beginning of April the hearing was greatly improved, a whisper was heard at some 12 feet away.

The case is interesting, not only from the point of view of the marvellous escape, but also as it is the only recorded one of perforation of the membrana tympani from lightning stroke.

Linen Sewing-Machine Thread for Ligatures and Sutures.—Arthur E. J. Barker, F.R.C.S., (*Lancet*, May 24, p. 1465) has used for ligatures and sutures linen thread made for the sewing-machine in a large number of cases during the last 2 years, indeed, almost exclusively. It has the following advantages. It can be procured all over the world wherever there is a *dépôt* for Singer's sewing-machines. It is relatively very cheap. It can be easily sterilised by boiling in plain water and then stored in methylated spirit. It is enormously strong and ties a most uncompromising knot. It is easy to work with and easily runs through the eye of any suitable needle, having been spun with special care in order to travel evenly through the sewing-machine needle. The writer

uses 3 sizes—viz., No. 40, which is as thick as need be desired for the abdominal wall or ligature of the larger arteries; No. 60, which is thinner but still very strong; and No. 90, which is as fine as can be desired, say, for a suture of the intestine. He finds it convenient to procure No. 40 in white thread, No. 60 in red, and No. 90 in black. He has prepared the thread by simply boiling it for an hour in ordinary water and then keeping it in spirit. In boiling a little of the dye comes out of the finer sizes but the thread does not appear to alter otherwise, and it can be boiled over and over again without rotting.

One of the greatest tests of such a thread is an enterectomy or a gastro-enterostomy, and here a wide trial has shown it to be most satisfactory. In the skin its non-irritating nature can be studied if it has been tied too tight. It comes out at the end of 10 days or so just as it went in. To those who work in out-of-the-way places and who often find it difficult to obtain the usual materials this linen thread should prove a boon. It probably is not absorbed at all but appears to be none the worse for this. Cotton thread is not strong enough for surgical ligatures and, moreover, rots if much boiled.

Gonorrhœal Phlebitis.—Dr. Caraës (*Jour. de Méd. et de Chirurg. Pratiq.*, Feb. 25, p. 144).—The writer has collected 21 cases of this rare complication of gonorrhœa. More frequent in men than in women, it affects especially the veins of the lower limbs, particularly the internal saphenous, and after it the femoral. From the 15th to the 40th day after the commencement of the discharge there occur general symptoms such as malaise, anorexia, rigors, acceleration of pulse, and a slight rise of temperature. These are followed by the signs of phlebitis—pain, swelling, and œdema. In slight cases the pain and swelling soon disappear, but in ordinary cases they do not diminish for 6 weeks; the general symptoms begin to decrease about the 7th day, and have totally disappeared about the 20th day. In some cases the absorption of the clot took place so slowly that cure was

not complete for 5 months. The phlebitis is generally confined to one limb, but it may become bilateral and may involve the abdomen and the arms. Suppuration has never been observed; pulmonary embolism is exceptional. Gonorrhœal phlebitis thus usually lasts 2 or 3 months, though the œdema and difficulty of movement may persist longer. The treatment is that of ordinary phlebitis, the urethritis should be first treated, as in gonorrhœal arthritis, (which often accompanies the phlebitis).

The Treatment of Aneurysms by Excision.—A. von Eiselsberg (*Wien. Klin. Rundschau*, Jan. 5, p. 8) has practised excision in 11 cases of aneurysm—5 of the popliteal, 4 of the femoral, 1 of the brachial, and one of the temporal arteries. Nine of the 11 cases were traumatic; in one of these the injury was a forced march, but in most there had been a stab or a blow shortly before the appearance of the aneurysm. The immediate result of total excision was good in every case, except one, in which resection of the adherent vein with the aneurysm was followed by gangrene of the dorsum of the foot and fatal erysipelas. The remote results were less satisfactory: of 7 patients, who were under observation for more than 2 years only 2 regained complete use of the limb; the remainder complained of formication, "pins and needles," and other troubles, which interfered with their employment. In 1 case a small patch of gangrene appeared on the heel 6 weeks after the operation, but this soon healed. The following is a typical example:—

A man, aged 52, had a pulsating swelling at the lower end of Hunter's canal which had appeared at the beginning of Nov., 1901. It was of the size of 2 clenched fists, and the artery above and below was dilated. The heart and arterial system were otherwise normal. The left leg was cold and there was formication. Towards the end of Nov., 1901, the aneurysm was resected. Three weeks later the patient was well except that there was a bluish patch on the left great toe, which probably pointed to impending gangrene.

OBSTETRICS AND GYNÆCOLOGY.

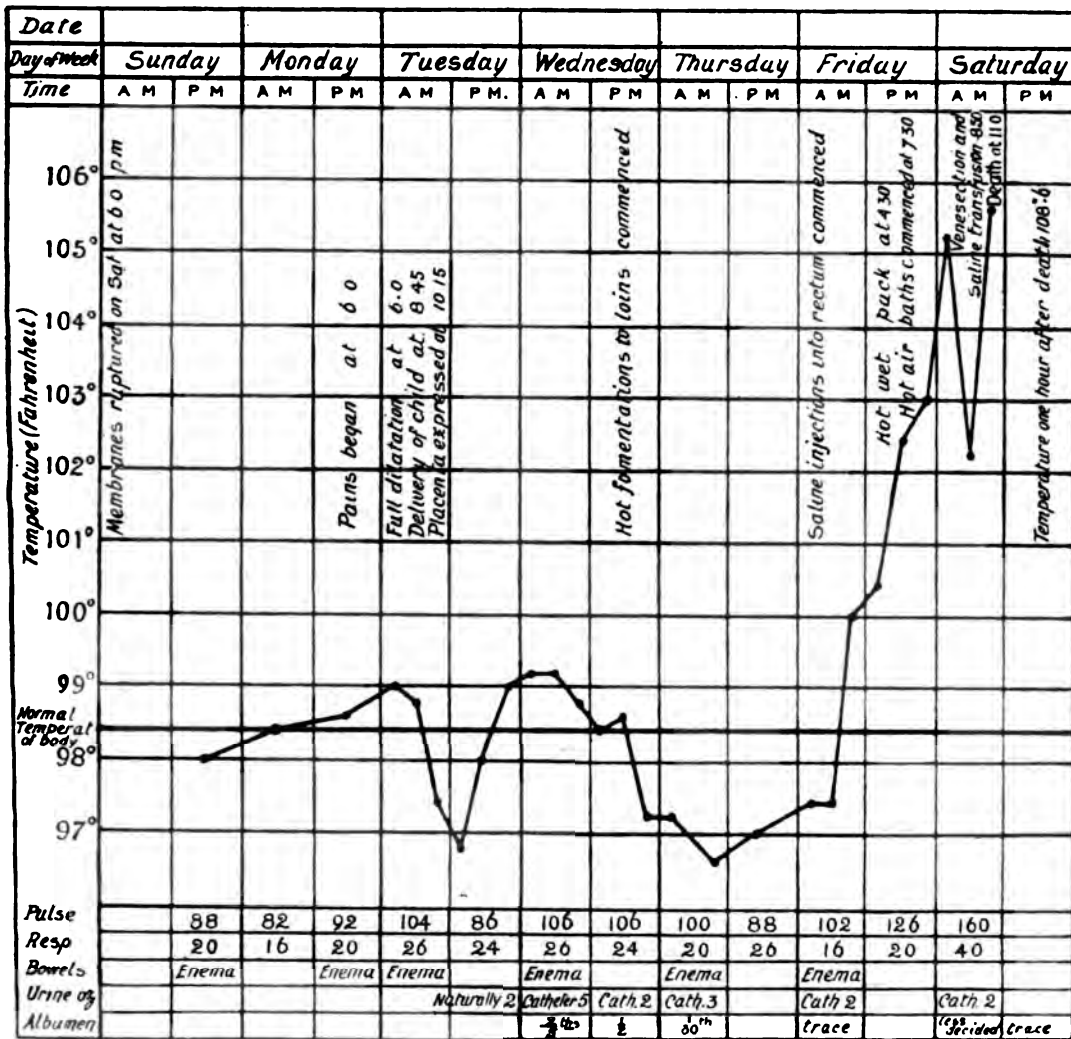
Fatal Partial Suppression of Urine following Labour and Miscarriage.—Robert Boxall, M.D., M.R.C.P. (*Jour. of Obst. and Gynæcol.*, May, p. 512).—Within the last year the writer has seen 2 fatal cases of partial suppression of urine, one 4 days after labour which took place a week before term, the other a fortnight after a 5 months' miscarriage. In neither case were the symptoms such as to draw attention till shortly before death to the exceedingly grave condition of the kidneys.

CASE I.—A woman, aged 30, had previously had two miscarriages about the third or fourth month. At the time of the first miscarriage the urine contained albumin in considerable quantity. The second miscarriage was followed by sepsis and excessive loss, for which the uterus was curetted. During the third pregnancy there were repeated gastric attacks.

Labour was rather severe, the membranes having ruptured on Saturday at 6 p.m., a week before term. The pains began 48 hours afterwards. For 2 hours before the completion of the first stage they were severe and almost continuous. On Tuesday at 6 a.m. the head was beginning to pass through the cervix and to descend into the pelvis. Chloroform was administered during the pains. During the last half-hour the pains began to flag and the patient showed signs of exhaustion; but just as the forceps were about to be applied delivery took place at 8.45 a.m. The placenta was expressed 1½ hours afterwards. Artificial respiration was performed for at least 5 minutes before the child breathed. For nearly a month it had slight fits and frequent convulsive movements which gradually disappeared. Towards the end of labour and for some hours afterwards the patient was sick, and brought up a quantity of brownish fluid. Everything given by mouth—even water in teaspoonful doses—was rejected. As she was

rather exhausted rectal feeding was at once commenced. The pulse was 80 and of fair volume.

On Tuesday at 6 p.m. about 8 hours after labour 2 ounces of urine were passed. During the following 18 hours none was passed, but on Wednesday, at noon 5 ounces were drawn off by the catheter. This urine was dark and contained $\frac{2}{3}$ albumin. No casts or blood could be detected. Hot fomentations were at once applied to the loins. There was a distinct icteric tint of the conjunctivæ, but it passed off in a day or two. Eighteen hours after delivery the sickness had ceased, and 6 hours later feeding by the mouth was recommenced. The rectal feeding was at the same time continued. On Wednesday evening only 2 ounces of urine could be obtained by the catheter, and this contained $\frac{1}{2}$ albumin. On Thursday at 6 p.m. the sickness returned, but there was no headache, drowsiness, or loss of vision. The merest trace of pitting could be obtained by firm pressure over the tibia. On inquiry it was elicited that there had been slight backache till the fomentation was applied. Next morning rectal injections of saline fluid, 1 pint at a time, were given to induce the kidneys to act, but without effect. In the 24 hours only 3 ounces of urine could be obtained. The amount of albumin, however, had fallen to $\frac{1}{10}$. A few casts were found. A hot wet pack given on Friday at 4.30 p.m., produced no appreciable perspiration. Twitching of the fingers began at 6 p.m. A hot-air bath was then given, and was repeated twice. It produced copious perspiration, but in the next 24 hours not more than 2 ounces of urine could be obtained. The albumin, however, had further diminished. The patient was able to take liquid nourishment by the mouth, and was fully conscious. She slept for some hours. The temperature, which had hitherto been normal



or subnormal, began to rise, and during the following night reached 105° . The face became dusky, and the breathing laboured, and consciousness was lost. The twitching of the muscles increased and involved the face. Bleeding to the extent of 40 ounces, with subsequent infusion of saline fluid, produced but slight and transitory improvement. The coma deepened, and 8 hours after consciousness was lost death occurred after one slight convulsion. The temperature one hour after death was 108.6° .

There was never complete suppression of urine, but from the time of delivery till death, 4 days

afterwards, not more than 16 ounces were secreted. The progressive diminution of the albumin is worthy of note. The vomiting, which was at first regarded as, and probably was, gastric, like that during the pregnancy, subsided and then returned. Apart from the vomiting there were no urgent symptoms until 8 hours before death, though slight twitchings had already been noticed 9 hours earlier. If the urine had not been examined on the day following labour the illness might have passed unrecognised till the day before it terminated fatally, and might have been mistaken for acute septic

poisoning. No time was lost in taking active measures, but they failed to re-establish the function of the kidneys.

CASE 2.—A young and well-developed primipara miscarried when 5 months pregnant, possibly from taking large doses of tincture of gossypium and also from mechanical interference. On the previous day, she took a Turkish bath, which was followed by a chill, which may have affected the kidneys, as well as assisted to bring on miscarriage. The membranes were retained, and were removed by the introduction of two fingers into the uterus. A sublimate douche was given, and was repeated afterwards. Vomiting commenced at the time of miscarriage and was very persistent. The conjunctivæ were distinctly jaundiced next day, and remained so for a week.

On the twelfth day, when the writer was called in, the temperature was 98°, and the pulse 48, dicrotic, and rather feeble. But the patient, in spite of the persistent vomiting, did not appear to be seriously ill. She complained of pain in the region of the gall-bladder. The urine had not been examined. None could be obtained, and no reliable information could be gained as to the quantity passed. The bowels had been relieved by a calomel purge, and had been kept open by enemata. Of numerous remedies tried none checked the sickness. Rectal feeding was suggested. Two days later she became rapidly worse. Little urine was passed, and it contained albumin, blood, and a few casts. Vomiting was incessant, the pulse continued slow, and the temperature subnormal. She died semicomatose on the seventeenth day.

NECROPSY.—The liver was pale and soft; the kidneys were enlarged and much congested, and showed evidence of old-standing disease of moderate degree, and also of recent acute inflammatory softening. There was some excess of blood-stained fluid in the peritoneal, pleural, and peri-cardial cavities. Indications of some blunt-pointed instrument having been passed were found in the cervix.

When the writer saw the patient there was no headache, drowsiness, disturbance of vision, back-ache, or œdema, and, as far as could be ascertained, the urine was passed in sufficient quantity. There were reasons for regarding the vomiting as gastric, and he failed to recognise the gravity of the condition. Nor, when 2 days later she was taken worse and the urine had been examined, does it appear that the condition of the kidneys was recognised or that active measures were adopted to combat the renal inadequacy.

Both cases go to show that a grave condition of the kidneys may exist with little beyond persistent vomiting to indicate danger till shortly before death. The first case, in which saline injections, both into the rectum and into the veins, were among the measures early adopted and actively persisted in, affords but slight hope of re-establishing the function of the kidneys in such cases. In both cases long-standing kidney disease undoubtedly existed. Absorption from the sublimate douches given at the time of delivery may have played at least a part in inducing the active mischief. In the case following miscarriage the writer was consulted by the doctor in attendance with the special object of determining whether the symptoms might be due to mercurial absorption. But none of the signs of mercurial absorption were found. But as absorption occurs even when only a single douche has been given, possibly the passage of a mercurial compound through a previously damaged kidney, though insufficient to produce definite symptoms of mercurialism may have played a part in producing the acute mischief which caused the suppression.

See also "REVIEW," p. 263.

"Nasal Dysmenorrhœa." — F. Linder (*Münch. Med. Woch.*, June 3, p. 922) has investigated the statements of Fliess as to the connection between the nose and dysmenorrhœa. This writer states that in most women during menstruation the mucosa over the inferior turbinate bone

and the tubercle of the septum ("genital points") becomes hyperæmic and hyperæsthetic and bleeds readily. When these points are rendered insensitive by cocaine the dysmenorrhœa ceases as long as the anæsthesia lasts, and if the points are destroyed by the cautery the dysmenorrhœa is permanently cured. Schiff amongst others, had good results in 72 per cent. of the cases of dysmenorrhœa so treated. It appears to be immaterial whether nasal or genital abnormalities are present or not.

The writer treated 30 cases. In some there was disease of the appendages, endometritis, or parametritis; others in the genital organs were normal. With the exception of 2 cases in which there was suppuration of sinuses the nose was healthy. Only 16 of the 30 cases were used for statistical purposes, as in the others the dysmenorrhœa was not sufficiently constant and uniform for the exclusion of coincidence. The results prove that the pain of dysmenorrhœa often disappears after the application of cocaine to the genital points. In 10 of the 30 cases the pain disappeared or was much alleviated after 1 or 2 applications, and did not return for some hours or even for a whole day. The following evening the pain was usually again present. Tap-water was then substituted for cocaine without the patients' knowledge. In 2 cases it had no effect, but in 6 there was either marked temporary improvement in, or even total disappearance of the pain. But the pain returned or some discomfort appeared in 10 or 15 minutes. The application of cocaine then removed the pain as completely as it did on the preceding evening. If water was substituted for cocaine openly, it had no effect whatever. In 4 patients neither cocaine nor water had any result, and in 2 attempts to cocaineise the nose were followed by such violent dysmenorrhœal pain, that the treatment was abandoned. The writer concludes that suggestion plays an important part in the treatment, but that the nasal origin of certain forms of dysmenorrhœa cannot be excluded, as in 2 cases in which cocaine acted well water had no effect.

However this may be, the fact remains that cases of dysmenorrhœa are remarkably numerous in which nasal treatment gives excellent results.

See also "REVIEW," p. 256.

Atrophy of the Uterus and Permanent Amenorrhœa after a Shock. — A. W. Addinsell, M.B., M.R.C.P. (*Brit. Med. Jour.* May 17, p. 1205).—A woman, aged 26, was seen in 1894 for sterility. She was married a year before. A fortnight after marriage, when a period was expected, she sustained a great shock in consequence of a serious accident to her husband. The expected period did not take place and menstruation had never occurred since. Menstruation began at the age of 12½ years, was always regular every 28 days, lasted 4 to 5 days, and was occasionally somewhat copious but never painful.

She was a well developed woman. The breasts were fully formed. The external genitals were normal. Vaginal examination was negative; the ovaries were easily felt; the uterus was freely movable. The cervix appeared healthy, and of normal length and size. The sound passed 2½ in.

In 1896 there was a slight show for one day only. With that exception there had not been a period since marriage, nearly 7 years before.

In July, 1901, after 6 years of amenorrhœa she looked in good health, was strong and active, and played golf. She complained of heats and flushes at irregular intervals, about every 2 months or 10 weeks. The ovaries were still apparently healthy but no cervix could be felt, merely a dimple in the vaginal roof. Bimanually no uterus could be made out, and the sound passed just under 1 in. Sexual feeling was retained and occasionally the breasts became tense and tender.

This case is unique in the writer's experience. It cannot be described as one of superinvolution, for the uterus was never enlarged beyond normal.

The amenorrhœa seems to have resulted from shock when menstruation was due. The writer has seen many cases in which menstruation has been suddenly arrested, sometimes with unpleasant sequelæ, which have persisted for a long time. A woman, aged 22, whilst menstruating, saw another woman's throat being cut and the victim fell dead at her feet. Menstruation was arrested, and next morning the whole of the hair of the pubes on the right side was pure white, while that of the left remained dark. All the pigment of the right labium majus disappeared, and the inner side of the right thigh was bleached. Menstruation did not take place for 9 months, but it is now quite normal; the absence of pigment, however, persists. The case described above the writer, for want of better explanation, regards as premature senility of the uterus. Dr. Percy Boulton mentions two cases of atrophy of uterus after pregnancy (*Brit. Med. Jour.*, vol. ii, 1872). In all recorded cases of amenorrhœa following shock recovery has taken place in some months, generally without any local treatment. The writer is not aware of any case of atrophy following directly upon a nervous shock. The occasional swelling of the breasts and general sense of pelvic discomfort appear to show that ovulation goes on.

Uterus Septus with Double Vagina: Pregnancy after Removal of the Vaginal Septum.—Dr. A. W. Russell (*Glasgow Med. Jour.*, June, p. 452).—A woman, aged 27, who was married a few months, complained of dyspareunia. Menstruation was normal. The vagina was of normal length, and had a mesial vertical fleshy septum, which was attached to the cervix and extended down to the vaginal entrance, where its breadth was greater, and therefore allowed its edge to fall against the side

of the vagina. The right side was rather the more roomy of the two, but both were funnel-shaped, so that anyone making a vaginal examination, and overlooking the septum, would think that there was a defective development of the upper end of the vagina and of the uterus beyond it. No communication between the two passages could be discovered. An os uteri was found on both sides of the septum, but as the patient had missed a menstrual period further examination was not made. Menstruation recurred a few weeks later, and an examination under chloroform was made. The uterine cavity was found to be completely divided by an antero-posterior septum into a right cavity of nearly the size and shape of a normal uterine interior, and a left and smaller cavity more tubular. Two sounds, one in each cavity, nowhere touched one another. To relieve the dyspareunia, due to the narrowing of the upper reach of the vagina the vaginal septum was cut through and trimmed off.

The patient soon became pregnant, but aborted after 2 months. She again became pregnant. Two months later, after some pain, becoming gradually worse for several weeks, she had some hæmorrhage and abortion was threatened. Under rest and other treatment this passed off, but pain continued till the fifth month. After a severe attack of pain she felt something give way and there was a little hæmorrhage. Probably this indicated the rupture of the uterine septum, as pregnancy was not afterwards disturbed by pain. Examination showed that pregnancy was developing in the right cavity, the left and undeveloped half being distinctly made out as a thickening on the left and posterior aspect of the uterus. Labour was normal. The second os uteri could not be felt. After a fortnight examination showed that the uterine cavity was single, there being no sign of septum either at the cervix or in the uterus.

NOTES.

HÆMATOLOGY.—Highly important advances have recently been made in our knowledge of the pathology of the blood. They constitute a valuable aid in the diagnosis of many diseases which should not be ignored by the practitioner. A useful editorial article on this subject appears in the *Lancet* of May 31. No fewer than 6 distinct varieties of leucocytes may be normally recognised in the blood of an adult. They occur in varying numbers and percentages under different physiological and pathological influences, and knowledge of their appearances and the conditions under which they are seen or are absent is important. Leucocytosis may be physiological: it occurs under the influence of digestion, pregnancy, and parturition. A transient increase in the number of leucocytes of the blood drawn from a peripheral vessel, and not involving a disturbance of the normal ratio between the different forms of cells, is produced by muscular exercise, by brief exposure to atmospheric cold, and by the application of electricity and of massage. Dry or moist heat, if long applied, also increases the number of leucocytes. Terminal or preagonal leucocytosis is a term which has been given to the increase in the number of white cells which has been observed shortly before death. Pathological leucocytosis comprises a number of conditions—inflammatory and infectious leucocytosis, post-hæmorrhagic leucocytosis, toxic leucocytosis, and the leucocytosis of malignant disease. There are other methods of examination of the blood only in the experimental stage; their clinical utility has not been accurately determined. Amongst these are estimation of the relative volumes of corpuscles and plasma, the

s.g. of the blood, and its alkalinity, determination of the rapidity of coagulation, and the counting of the blood-plaques. Simple microscopic examination of fresh blood, bacteriological examination, determination of the serum reaction, and spectroscopic examination are better known procedures.

Blood changes have now a definite value. They may be divided into two main classes—phenomena pathognomonic of certain diseases, and auxiliary data, which in connection with other data may prove helpful in establishing the diagnosis. Of the first class the most typical examples are afforded by leukæmia, malarial fevers, and filariasis. In the second class are Hodgkin's disease, splenic anæmia, and secondary anæmias dependent upon various causes. The blood has been shown to give valuable information in the diagnosis of appendicitis ("REVIEW," p. 72), malignant disease, typhoid fever, sepsis, and diabetes, and in many cases prognostic indications are also yielded. In typhoid fever the number of leucocytes is usually diminished, but leucocytosis occurs after perforation. Hence its value as a sign of this condition. But it may also occur in other complications of typhoid fever, such as bronchitis, cholecystitis, phlebitis, etc. ("REVIEW," Vol. IV., p. 397). It has quite recently been shown that in malaria when the parasite cannot be found in the peripheral blood the leucocytes may show characteristic changes (REVIEW," Vol. V., p. 388). During and for some time after malarial attacks the number of leucocytes is greatly diminished, while the large mononuclear forms are relatively increased.

LEPER HOSPITALS.—Dr. Franziska Tiburtius, who has visited some of the most important leper hospitals in Palestine and Europe, has recorded his impressions in the *Deutsche Medicinische Wochenschrift* of May 15 and 22. In the Orient leprosy is considered to be a disgrace and the fear of infection is great. These two factors now, as in the time of Christ, make the leper a social outcast. Consequently the disease is concealed as long as possible. When the symptoms such as the loss of eyebrows, and the formation of tubercles render concealment no longer possible the leper is taken by his relations before the local sheikh or magistrate and declared an outcast. He is denied all social intercourse with the sound and his estates and property are sequestered and handed over to his heirs. Among the Mohammedans the leprosy woman is sent away from her husband and the leprosy man is driven from his native place. Among the Christian Arabians (all the lepers in Palestine are Arabians, Fellaheen, or Bedouins) the contraction of leprosy *ipso facto* dissolves marriage, and the healthy husband or wife may marry again.

No provision was made for these unfortunates until 36 years ago, when Baroness von Keffenbrinck-Ascheraden, with the assistance of an English clergyman, founded a leper asylum a few miles distant from Jerusalem on the plain of Rephaim. It is a solid structure of stone and stands in the midst of two acres of garden-land which is surrounded by a high wall. It now contains only about 36 patients—a small fraction of the lepers of Palestine. The number is so small partly on account of prejudice, and partly because during the last decade the Turkish authorities have erected two asylums, one at Siloa, the other at Nablus. They are nominally under the control of a

sheikh. He collects a certain percentage of the alms obtained by the lepers, who are allowed to come and go at will. The Arab, always impatient of control, will not subject himself to the rules and regulations of the German Asylum until he is no longer able to beg. Hence the inmates usually are in the most advanced stage of the disease. There is a separate department in which the children born at the colony of Siloa of leprosy parents are admitted.

The experience of the asylum confirms the view that leprosy is not contagious. In the 36 years since the foundation not one of the nurses—male or female—has contracted the disease although they daily dress the foul sores, and wash the linen of the patients. The superintendent and his family live in the institution with impunity, but his children are not allowed in the patients' quarters. The visiting physician, Dr. Einsler, states that leprosy tends to affect certain families, in which it has been present for generations. Most of the inmates have leprosy relations, who, in order to keep the estate in the family, intermarry as far as is lawful. Dr. Einsler knows of no single instance in which direct contagion has been proved. As regards the children of leprosy parents, who are kept in the asylum, so that the first symptoms of the disease may be noted, none have become leprosy, though the eldest is now 12. They are taught to read and write and work in the garden.

The conditions in Norway are very different. On the outskirts of Bergen is a long white building surrounded by a high wall. This and a small institution in the town itself are now the only leper hospitals in Norway. Leprosy is steadily decreasing and there are now under 200 patients in the hospitals, while a few years ago there were

350. The reason for this decrease is a matter of conjecture, but it has been coincident with the popularisation of hygiene and of the value of fresh air, light, and cleanliness among the section of the population in which leprosy most often occurs, that is, the farm labourers, and woodmen in the forests and mountains, and the fishermen on the coast. The lot of the leper in Norway is not so hard as in Palestine. The disease entails no stigma, and the fear of infection is less. Isolation is not enforced in every case. Those who have a separate room and separate utensils, and can avoid direct contact with the other inmates of the house, are allowed to live at home subject to occasional inspection. An old man with a red bandage over his destroyed eyes and other signs of advanced leprosy was seen sitting by the roadside surrounded by playing children, who were apparently acting as his guide. In a shop in the town a leper in an early stage was recognised who shortly before had been seen in the hospital. In the East lepers support themselves by begging, in Norway the State supports all those without means.

It is remarkable that even in Norway where so much has been done to eradicate leprosy, where the statistics of years are available, and where such men as Armauer Hansen have devoted their lives to the study of the disease, the question whether it is contagious or hereditary is still disputed. That the danger of infection is not thought to be great is shown by the fact that the large leper hospital at Molde which was closed in 1897 for lack of patients, has, after thorough disinfection, been converted into a sanatorium for phthisis.

In Brazil, where the disease is not less thoroughly studied, than in Norway, contagion is considered proved. Popular belief attributes much etiological importance to the excessive

consumption of pork. The disease during the last decade has been gaining ground, in spite of the erection of excellent isolation hospitals at Pernambuco, San Paulo, and Rio de Janeiro, in which the police can inter any patient. They seldom, however, appear to exercise their power.

ARSENIC AND CANCER. — In 1887 Mr. Jonathan Hutchinson presented to the Pathological Society a paper showing that the prolonged use of arsenic in medicinal doses may produce keratosis of the palms and soles and a peculiar form of epithelioma. Since that time other writers have recorded some confirmatory observations. The epidemic of arsenical poisoning in the North of England brought to light the fact that beer normally contains a small quantity of arsenic. Mr. Hutchinson in recent numbers of the Polyclinic suggests that arsenic derived from this and other sources may have played some part in the increase of cancer. He points out that soot contains arsenic — a fact which seems to explain its well known influence in producing chimney-sweep's cancer. A paragraph in the "Encyclopædia Britannica" in this connection is curiously prophetic. Dr. Shadwell says: "The soot is supposed to act as an irritant; but, if so, why are potters and coal-miners, who also work in irritating materials, so very low in the cancer scale? No doubt the case of the chimney-sweep contains one of the keys to the problem of cancer causation, but it has not been found yet." Possibly, arsenic is the key. The Registrar-General's statistics, which show that the vocation of chimney-sweep is by very far the most dangerous one, give other hints. Next to the sweeps come in order innkeepers in London, brewers, servants in inns, commercial travellers, and maltsters. All these are likely to be exposed to the influence of arsenical beer.

LEADING ARTICLES

LANCET, July 5, p. 1

Patent Foods.

By ROBERT HUTCHISON, M.D. EDIN.

Most patent foods exist because it pays to produce them and because the public is persuaded by assiduous advertisement that they are requisite for the sick room. The scientific considerations which might justify their manufacture are loss of appetite, difficulty in chewing or in swallowing, defective digestion, need of increasing some ingredient in the diet—fat, carbohydrate, or proteid; deficiency of the natural food, e.g. mother's milk, and cheapness. The majority of artificial foods do not fulfil one of these conditions.

(1) Only one group is a powerful stimulant of the appetite—namely, those foods which contain extractives of meat.

(2) Very few artificial foods are more easily swallowed or chewed than natural foods. There is no better liquid food than milk or suitably prepared gruels. If the patient cannot swallow such foods as these no artificial food is likely to be useful.

(3) The necessity for peptonising food is greatly exaggerated. There are few conditions of the stomach and intestines in which the digestion of food is not carried on well. Even when the stomach and intestines seem to be much disordered from gastro-intestinal catarrh or even typhoid fever absorption is very complete. Probably all the digestive glands act at a very low pressure and

there is an enormous reserve of power in the alimentary canal, and if food escapes from the stomach without being digested it will almost certainly be satisfactorily dealt with in the small intestine. The mere fact that the stomach has struck work does not constitute a necessity for recourse to predigested foods unless the motor power is also deficient. So long as the stomach can drive its contents into the bowels there will be no defect of digestion worthy of the name. Pepsin is almost never absent from the gastric juice unless hydrochloric acid is also absent. The cases in which hydrochloric acid is absent are very few; it is often in excess (hyperchlorhydria), but it is rarely absent or so reduced as to make predigested foods necessary.

(4) Enough is not known about nutrition to state the value of enriching the diet in any particular constituent. What is often wanted is to enrich the diet all round, especially in the case of convalescents. The best course is to increase all the constituents—proteids, carbohydrates, and fats. There is no easier way than to drink milk with or between meals.

(5) Of all the patent foods not one is worth the price. In Valentine's Meat Juice there are 6 units of energy for a shilling, in Denæyer's Peptone 9 units, in Somatose 16½ units. In meat there are 511 units for a shilling, in eggs 1065 units, in milk 3440 units, and in sugar nearly 5000 units.

CLASSIFICATION OF PATENT FOODS.

I. *Foods intended to supply special nutritive constituents :*

1. Proteid foods.

- (i.) derived from meat—meat powders : Leube-Rosenthal's Solution.
- (ii.) „ milk—e.g. Nutrose, Eucasin, Protene, Plasmon.
- (iii.) „ vegetable sources—e.g., Aleurone
- (iv.) „ mixed sources—e.g., Tropon.

2. Carbohydrate foods—e.g., malt extracts.

3. Fatty Foods.

- (i.) Cod-liver Oil Emulsion.
- (ii.) Petroleum Emulsion,
- (iii.) Pancreatic Emulsion.

4. Mixed fatty and carbohydrate foods—e.g., Virol, Virvis.

II. *Beef Extracts* (see Table I.).III. *Beef Juices* (see Table II.).IV. *Peptonised Foods* (see Table III.).

- (a) solid—e.g., Somatose, Peptonoids, &c.
- (b) liquid—e.g., Panopepton, Wine of Peptone, &c.

V. *Infant Foods* (see Table IV.).

Some of the first sub-group, those intended to supply an extra quantity of proteid, are derived from meat by driving off the water at a low temperature, leaving behind the dry fibre. Brand's Nutrient Powder is one. It may be useful. It is moderately cheap, and can be easily stirred up into broths or milk. For artificial feeding by the nose or œsophageal tube such preparations have been much used, especially in France and in the asylums of this country. They do add largely to the nutritive value of the fluid poured down the œsophagus. Leube-Rosenthal's Solution is a partially digested meat in the form of a sludge. It is extremely easily digested and is a

good preparation. In Germany it is largely used in cases of gastric ulcer and it is of high nutritive value.

The foods derived from milk form a large group in which the proteid of milk—casein—has been separated in a pure form and is intended to be added to other foods to increase their richness in proteid. Casein presents many advantages: it is colourless, odourless, and tasteless, so that it can be stirred into the food without the patient's knowledge. It is free from nuclein compounds, so that it can be taken by gouty people without risk of producing extra uric acid in the body. Several preparations of casein have been introduced under special names—e.g., Nutrose (sodium-casein), Eucasin (ammonia-casein), etc. There is also the English preparation, Protene, which is a white flour-like preparation of casein. Plasmon is a special preparation of casein in which the casein is rendered soluble by the addition, under special conditions, of bicarbonate of sodium. Casumen is an English preparation of very pure soluble casein. These are amongst the most useful of all the artificial foods. They can be added in large amount to ordinary food such as soups and milk and even to some solid foods with great benefit and without the patient being aware of the addition. As they contain 80 or 90 per cent. of pure proteid the amount of nutriment which they supply is considerable.

The third class, derived from vegetable sources, was introduced as a cheaper source of proteid. The one which has been chiefly recommended is Aleurone, the proteid of wheat; it is colourless, odourless, tasteless, and fairly soluble.

The last class in the group is those containing substances derived from both animal and vegetable sources. The best example

is Tropon, which is relatively very cheap, because it is derived from waste animal and vegetable substances. It was found that by washing away the fat from these substances a powder could be obtained practically free from odour and taste, which could be kept indefinitely, and which was rich in proteid. It has the disadvantages of not being readily soluble and of having rather a sandy taste.

The next sub-group includes foods especially intended to supply carbohydrates. The best examples are the malt extracts. These contain sugar, from 50 to 55 per cent. ; soluble starch, from 10 to 15 per cent. ; proteids, from 5 to 6 per cent. ; and ash, from 1 to 2 per cent. They were originally made because they contained diastase, being prepared by evaporating an infusion of malted barley at a low temperature so that the ferment is not destroyed by heat. It was hoped that they would help the digestion of other starchy foods by converting them into sugar. The consequence of this view is that malt extracts are expensive, as they have to be carefully produced lest the diastase should be destroyed. But the majority who prescribe them do so because they want to give sugar, and they contain only half the weight of sugar that ordinary loaf-sugar does. There is no proof that malt sugar is much superior to other natural sugars. It is true that it is *partly* digested and it certainly seems to agree better with the stomach than cane sugar. But such a substance as honey contains *wholly* digested sugar, ready to be absorbed straight into the blood, and honey contains a larger proportion of dextrose than does anything else. A pound of honey costs 9d. ; a pound of malt extract costs 3s. ; and the honey is the better source of sugar. Therefore if diastase is not wanted it is better to order honey.

Of foods the most important is cod-liver oil emulsion. It is not proved that cod-liver oil fat possesses any special virtues. Cream is a more valuable substance, because it contains more than 50 per cent. of fat, which is as easily digested and absorbed as the fat of cod-liver oil, besides having the advantage of being much more palatable and cheaper. There is no reason for ordering cod-liver oil emulsion if only an easily digested fat is wanted, when there are such substances as cream and butter. Petroleum emulsion is believed by many to be a substitute for cod-liver oil. But a mineral oil like petroleum can never be absorbed into the blood, and any action of petroleum emulsion is purely local. Pancreatic emulsion is really emulsified lard flavoured with clove oil. It does not contain more fat than butter, and lard is certainly not more digestible than butter.

Of mixed fatty and carbohydrate foods there are Virol and Virvis. These preparations contain malt extract and marrow fat flavoured with lemon juice. Of course, such a preparation has considerable nutritive value. Virol contains 20 per cent. of fat and 60 per cent. of carbohydrate and 2 oz. of it cost 9d. But chocolate contains more fat and more carbohydrate, while ordinary toffee consists of equal quantities of fat and carbohydrate without any water.

Beef extracts have little if any food value. They contain hardly any proteid, and chiefly consist of extractives and mineral matters. The extractives are only of use in so far as they stimulate the appetite ; they are not true stimulants. The place for them is the kitchen and not the sick-room. To make meat extracts of food value meat fibre has been added—as for example, in the case of Bovril. But a teaspoonful is only equivalent to about

half a cubic inch (8 gr.) of lean meat. If enough Bovril to serve as a food were taken diarrhoea and thirst would be produced on account of the disproportionate quantity of saline matters and extractives. The same is true of other similar substances.

TABLE I.—*Showing the Composition of Beef Extracts.*

	Liebig's Extract.	Bovril.	Bovril for Invalids.	Armour Extract.	Brand's Essence.	Vejos.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Water	18.3	44.4	21.82	15.55	87.17	25.02
Proteids	9.4	16.94	21.42	8.73	5.40	19.35
Gelatin		—	—	2.16	5.03	—
Extractives ..	30.0	20.32	39.60	43.23	1.01	21.02
Mineral matter	23.6	18.32	17.16	25.91	1.39	14.07
Ether extract, &c.	18.6	—	—	4.12	—	17.09 (Carbohydrate).

Beef juices contain the fluid proteid of meat in an uncoagulated form. Most of them yield the spectrum of hæmoglobin. The richest of them in proteid is Puro. It contains a large portion of egg albumin. Valentine's is the most expensive of all the juices, and it is inferior to most in nutritive value. One of the best is Brand's. Bovinine, unlike all the others, is suspiciously poor in extractives, and yields the spectrum of methæmoglobin. Hence it probably is not a meat juice at all, but blood preserved with glycerine. This accounts for its extremely low price and the absence of extractives. Thus the meat juices, like the extracts, contain relatively so little proteid and relatively so much extractive and so much mineral matter that they are practically not foods at all because one cannot take enough of them.

TABLE II.—*Showing the Composition of Beef Juices.*

	Valentine's.	Puro.	Bovinine.	Brand.	Wyeth.	Armour	Bourgoyne.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Water	51.21	36.6	81.09	59.15	44.87	74.10	49.51
Proteids	9.65	30.33	13.98	15.45	38.01	8.3	13.0
Extractives	11.16	19.16	3.40	16.55		9.54	8.10
Mineral matter ..	10.84	9.79	1.02	8.85	17.12	7.31	14.20

Anyone can manufacture "meat juice" at a very low price. Take the white of an egg, add an equal quantity of water, and strain through muslin, then flavour the mixture with any quantity of Liebig's extract dissolved in a little warm water which you think suitable. A preparation rich in coagulated albumin is produced at a penny an oz. The patient can swallow a pailful without harm. That made in this way is as good as can be bought. Egg albumin is as nutritious as meat albumin, and is much cheaper. (See table III.)

A good albumose food is somatose. It contains 80 per cent. of digested proteid; it is tasteless, odourless, and can be added to other foods. It has the disadvantage however, that in large quantities it is apt to produce diarrhoea, but the same is true of all peptone preparations. The liquid peptones, especially peptone wines, share all the disadvantages of medicated wines. They are indifferent with regard to the wine, and the added preparations do not confer any real nutritive value. Moreover, patients who use them are apt to acquire the alcoholic habit unknowingly whilst under the impression that they are merely taking food.

TABLE III.—*Showing the Composition of Peptone Preparations.*

Preparation.	Water.	Soluble proteids (chiefly albumoses).	Extractives and other non-proteid organic matter.	Mineral matter.
	Per cent.	Per cent.	Per cent.	Per cent.
Somatose	9.2	80.0	—	6.7
Carnick's Pepto- noids	5.4	24.0	65.4 (mainly sugar)	5.2
Koch's Peptone	40.16	34.78	15.33	6.39
Liebig's Peptone ..	31.9	33.40	24.6	9.9
Brand's Beef Pep- tone	84.6	7.0	—	1.4
Denaeyer's Peptone	78.45	12.15	4.32	2.54
Darby's Fluid Meat	25.71	30.60	30.18	13.50
Armour's Wine of Peptone.....	83.0	3.0	12.9	1.1
Fairchild's Pano- pepton	81.0	3.0	15.0 (largely sugar)	1.0
Peptonised milk....	87.5	1.76	10.04 (= sugar, fat, and unaltered proteid)	0.7

INFANT FOODS may be divided into 3 groups, as shown in table IV. (1) Those intended to be complete substitutes for human milk, on which a child may be healthily reared without further addition—Allenbury foods, Horlick's malted milk, Carnick's soluble food, and Nestlé's food. These are, practically, desiccated milks—milks from which all the water has been driven off whilst other constituents have been added. On these it is possible to rear healthy children, though they are apt to be deficient in fat. But after the first few months of life some fresh fruit juice should be added to the diet, otherwise scurvy may result. These foods have also the disadvantage of containing too little fat. But their great drawback is the cost.

(2) Next there are the malted foods and starchy foods in which the starch is supposed to have been altered by the action of a ferment. Infants below the age of 6 months are not expected to take starch, and these foods have been introduced to meet that necessity. They are supposed either to contain no starch or the starch which they do contain undergoes conversion into dextrine and sugar in course of preparation. The first class is exemplified by Mellin's food, which contains no starch. It may be regarded for practical purposes as simply a desiccated malt extract, and it bears to malt extract much the same relation that some of the foods of the first group do to condensed milk. It is only intended to be an addition to milk. As to the other class, the starch in the majority undergoes anything but complete transformation, even after careful mixing, to say nothing of the haphazard way in which the food is apt to be prepared in the nursery. It is better to order a food in which conversion has been properly carried out by the manufacturer. Mellin's may be used, but it is extremely poor in fat.

(3) The last group is composed of starchy foods pure and simple. Perhaps they have been baked so that the starch grains have been ruptured, but otherwise they are floury preparations. Although many are harmless to children able to digest starch, and although they may be of some use as a change, yet they have no real advantages over ordinary simple preparations, such as baked flour, oat flour, or other ordinary cereal preparations. For children below the age of 6 months they should be avoided. For adults who are confined to a semi-fluid diet they may occasionally be of use.

See also "REVIEW," Vol. IV., p. 492.

TABLE IV.—SHOWING THE COMPOSITION OF INFANT FOODS.

Food.	Water.	Pro- teid.	Fat.	Carbo- Hydrate	Mineral matter.	General description and remarks.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	
Dried human milk	—	12.2	26.4	52.4	2.1	The standard of composition to which artificial substances should conform.
<i>Group I.</i>						
Allenbury No. 1 (for children below the age of 3 months)	5.7	9.7	14.0	66.85	3.75	Desiccated cow's milk from which the excess of casein has been removed, and a certain proportion of soluble vegetable albumin, milk, sugar, and cream added. No starch present. Half an ounce in three ounces of water for a child aged 3 months.
Allenbury No. 2 (for children aged 3 to 6 months)	3.9	9.2	12.3	72.1	3.50	Resembles the above but contains some malted flour in addition. No starch present. One ounce in 6 ounces of water for a child aged 6 months.
Horlick's Malted Milk	3.7	13.8	3.0	76.8	2.70	A mixture of desiccated milk (50 per cent.), wheat flour (26½ per cent.), barley malt (23 per cent.), and bicarbonate of soda (½ per cent.). Contains no unaltered starch when mixed. Three teaspoonfuls (equals 22 grammes) in 4 oz. of water for a child aged 3 months.
Carrick's Soluble Food	5.5	13.6	2.5	76.2	2.20	A mixture of desiccated milk (37½ per cent.), malted wheat flour (37½ per cent.), and milk sugar (25 per cent.). When prepared according to directions the casein is partially digested, but a considerable amount of unchanged starch is left. One part to be mixed with 9 parts of water and boiled for a few minutes.
Nestlé's Milk Food	5.5	11.0	4.8	77.4	1.30	A mixture of desiccated Swiss milk, baked wheat flour, and cane sugar (30 per cent.). More than a third of the total amount of carbo-hydrates is in the form of starch. One oz. to be mixed with 5 oz. of water.
Manhu Infant Food	8.8	8.7	5.6	75.9	1.00	A mixture of desiccated milk and malted cereals. When prepared according to directions contains a good deal of unaltered starch. A dessertspoonful (equals 13 grammes) to be mixed with 2½ ozs. of water.
<i>Group II.—Class A.</i>						
Mellin's Food	6.3	7.9	Trace	82.0	3.80	A completely malted food. All the carbohydrate in a soluble form. May be regarded as a desiccated malt extract. Half a teaspoonful (about 5 grammes) a quarter of a pint of milk, and a quarter of a pint of water for a child under the age of 3 months.
<i>Class B.</i>						
Savery and Moore's Food	4.5	10.3	1.4	83.2	0.60	Composed of wheat flour with the addition of malt. When prepared according to the directions, most, but not all, of the starch is converted into soluble forms (chiefly dextrins). One or two tablespoonfuls (equals from an ounce to 2 ounces) to be mixed with 2 or 3 tablespoonfuls of cold milk or milk-and-water, and one-third of a pint of boiling milk, or milk-and-water to be added.
Benger's Food	8.3	10.2	1.2	79.5	0.80	A mixture of wheat flour and pancreatic extract. When prepared according to directions, most, but not all, of the starch is converted into soluble forms. The proteid is also partially digested as well as that of the milk used in mixing it. One tablespoonful (about an ounce) and 4 tablespoonfuls of cold milk, then add half a pint of boiling milk-and-water; set aside in a warm place for 15 minutes, then bring to the boil.
Allenbury Malted Food ..	6.5	9.2	1.0	82.8	0.50	A mixture of wheat flour and malt. When prepared according to the directions it still contains some unaltered starch. Designed for children above the age of 6 months. One teaspoonful (about an ounce), a teaspoonful of sugar, and 3 teaspoonfuls of cold water, mix and add half a pint of boiling milk-and-water (equal parts).
Diastased Farina	8.3	7.6	1.3	81.7	1.10	A malted farinaceous food. When prepared according to the directions practically all the starch is converted into soluble forms. One ounce of food, half a pint of cold milk, and 2 ounces of water. Heat slowly till it boils: boil 3 minutes and sweeten if desired.
Coomb's Malted Food	7.9	12.1	2.8	76.8	0.40	A malted farinaceous food. When prepared according to the directions it still contains much unaltered starch.
Nutroa Food	6.8	15.9	10.3	66.0	1.00	A mixture of cereals with the addition of a certain proportion of peanut flour, from which the somewhat bitter taste of the food and its high proportion of fat are derived. It is a self-digesting food, but when prepared according to the directions only part of the starch is converted. One ounce of the food to be mixed with one ounce of cold water and half a pint of boiling milk-and-water (equal parts) to be added.
<i>Group III.</i>						
Ridge's Food	7.9	9.2	1.0	81.2	0.70	A baked flour, containing only 3 per cent. of soluble carbohydrates, the remainder being starch. Recommended to be made with milk or water. Made with water alone is a totally insufficient food.
Neave's Food	6.5	10.5	1.0	80.4	1.60	Resembles the above but recommended to be made with milk-and-water.
Frame Food Diet	5.0	13.4	1.2	79.4	1.00	A thoroughly baked flour, to which has been added cane sugar and some extract of bran. It is not specially rich in mineral ingredients, but nitrogenous matters are abundant and it contains much unaltered starch. One-third of an ounce to be mixed with a breakfastcupful of milk-and-water (one part of milk to 2 parts of water).
Opnus Food	10.9	9.1	1.0	78.6	0.40	A granulated wheat food. One teaspoonful to half a pint of milk. Starch unaltered.
"Falona"	7.0	8.4	3.5	79.9	1.20	A mixture of cereals (oats, barley, and wheat), with a ground fat-containing bean. The food is thoroughly baked but contains a considerable portion of unaltered starch. A teaspoonful to half a pint of boiling milk or water, or half milk and half water.
Robinson's Groats	10.4	11.3	1.6	75.0	1.70	Ground oats from which the husk has been removed. Rich in proteid and mineral matter.
Robinson's Patent Barley ..	10.1	5.1	0.9	82.0	1.80	Ground pearl barley, poor in every element except starch and mineral matter.
Chapman's Whole Flour ..	8.4	9.4	2.0	79.3	0.80	A finely ground whole wheat flour. Not much superior in nutritive value to ordinary "household" flour. Starch entirely unaltered.
Scott's Oat Flour	5.8	9.7	5.0	78.2	1.30	A fine oat flour. Somewhat inferior in nutritive value to "groats." Starch unaltered.

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Appendicitis.

By SIR FREDERICK TREVES, F.R.C.S.

Appendicitis is not a new disease, nor is there evidence that it has become more frequent. It has been buried under a vast heap of confused and confusing clinical fragments and under much vague verbiage. It passed unrecognised in earlier times under such terms as "gastric attack" or "gastric seizure," "paratyphlitis," "cramp of the bowels," "inflammation of the intestines," "iliac phlegmon," and the like. It was the *fons et origo* of many forms of peritonitis. The rapidity with which the peritoneum can isolate an inflammatory effusion and render pus encysted was not understood. Consequently localised iliac abscesses were supposed to occupy the connective tissue of the iliac fossa. This supposition was supported by the erroneous belief that the posterior surface of the cæcum was bare of peritoneum.

The clinical phenomena termed "an attack of appendicitis" are due to local peritonitis. The manifestations of the disease, its effects and its possibilities are only those of peritonitis. Whatever may be the antecedent condition an attack of appendicitis does not exist until the peritoneum is implicated. Extensive inflammation of the appendix leading to great thickening of its walls, to widespread ulceration of its mucous membrane, and even to some stenosis, may exist without symptoms. This fact is illustrated by attacks of appendicitis without a preliminary abdominal symptom, and also by forms of recurring appendicitis in which during the interval between the attacks the patient is entirely unconscious of trouble in the right iliac fossa. In removing a simple ovarian cyst the

writer excised a much diseased appendix of which neither the patient nor her doctor had any suspicion.

An attack of acute appendicitis may be preceded by minor seizures of pain of short duration and irregular appearance in the cæcal region. The patient complains of occasional sharp pain in the iliac region which may "double him up," and for a moment make him feel sick and faint. The peculiarly sensitive may vomit. There may be some tenderness. There is no pyrexia or notable tympanites, and the attack ends in an hour or so, leaving an aching or a vague sense of weakness or discomfort in the region of the right groin and often troublesome constipation. These little disturbances—sometimes erroneously termed "appendicular colic"—depend upon changes in the appendix short of implication of the peritoneum. Possibly in a few there is a minute infection of the serous membrane and slight peritonitis. The most severe represent an outbreak of appendicitis in miniature. These little attacks may become so persistent as to weary the patient and impair his health. On several occasions the writer has removed an appendix although there had never been a definite "attack of appendicitis." The organ, on examination, has now and then revealed a degree of inflammation and ulceration of its lumen greater than that in some definite attacks of the accepted type. Usually the appendix is found of normal aspect but with stiff, thickened, and ulcerated walls. Concretions are common and in a few instances it has been adherent.

In a third series of cases the patient has abiding trouble in the right iliac fossa which may continue for months and may or may not be associated with acknowledged attacks of appendicitis. If there are no such attacks the condition merits the title of chronic true ap-

pendicitis, because the symptoms doubtless are due to gross changes in the vermiform process which have never spread in an abrupt manner to the peritoneum and so have never produced "an attack of appendicitis." These patients are never well. They are the subjects of unending digestive disturbances, colics, constipation, and occasional severe pains. There is often tenderness in the right iliac fossa with a sense of weight or dragging pain in the right thigh and a disposition to walk with the body bent. There may be no pyrexia. The condition of the appendix varies. It may appear normal when viewed externally but its inner coats may be much inflamed. It may contain a concretion, may be twisted or bent upon itself, or clubbed at its extremity. In several of these cases the writer has been surprised to find the appendix full of pus. He thinks that in such examples of uncomplicated inflammation of the appendix any advance of symptoms from mere discomfort to acute pain implies an advance of the disease from the inner coats to the peritoneal surface. It is not possible, except in gross instances, to predict the state in which the appendix will be found from a mere study of the clinical manifestations.

ETIOLOGY.—Eighty per cent. of the cases of appendicitis occur in patients under 30, and 73 per cent. of the whole number in males. Life in a tropical or sub-tropical country has a very marked effect in producing appendicitis in Europeans. This may probably be explained, to some extent, by the fact that in hot countries intestinal troubles are common. (2) In females an attack frequently coincides with a menstrual period. The appendix and the right ovary are often found in close contact and may be adherent to one another. The lymphatics of the two structures are

closely allied. Certain lymphatics from the vermiform process pass through the right broad ligament on their way to the glands about the internal iliac vessels. Clado has twice found infection passing from the appendicular lymph vessels to the utero-ovarian vessels. No doubt the ovary may be infected from the vermiform process, and possibly the appendix may be infected from the ovary. In removing a diseased appendix in a female it is well to examine the right ovary. In a few cases it will be found to be the seat of chronic inflammation, adherent, or cystic. In some of these it may need removal. When there is abiding discomfort in or about the right iliac fossa, with occasional exacerbations attended with inflammatory symptoms, and possibly associated with the menstrual function, it is often difficult to decide whether the organ principally concerned is the appendix or the ovary. In some cases both organs are concerned. In more than one case observed by the writer the ovary alone had been inspected and removed, and the attacks due to unrecognised disease of the appendix had persisted. On the other hand he has seen several cases in which the appendix had been removed for reputed chronic or recurring appendicitis, and in which the symptoms continued after the operation, and were in due course proved to be maintained by chronic ovaritis. (3) The most common factor in the etiology is a loaded cæcum. Over and over again in many cases attacks of exceptional constipation has preceded the outbreak, and many patients find that so long as they keep their bowels in order they have little to fear. The lodgment of ill-digested food in the cæcum is the most common preliminary to an attack. In some cases a considerable quantity of indigestible food has been eaten, such as pineapple,

preserved ginger, nuts, tough meat, or lobster. In other cases the patient has his meals irregularly or hurriedly, bolts his food, or rushes into active work or exercise immediately after he has eaten. In this category come the commercial traveller, the eager school boy, and the "city man," who has his lunch standing. In other cases the patient has few if any masticating teeth, and eats much meat to satisfy the spurious void of the dyspeptic. The engorged cæcum promotes appendicular troubles by becoming the seat of catarrh, by dragging upon the organ, by blocking its orifice, by interfering with the blood supply, by encouraging torsion of the tube itself, and by developing an inflammation of its walls which may spread to the little process. But in a large proportion of the cases the attack appears without any such preliminary disturbance, and the subjects of appendicitis may be careful eaters and have perfect teeth and digestion.

MCBURNLEY'S POINT.—Dr. McBurney writes, "In every case of appendicitis, the seat of greatest pain, determined by the pressure of one finger, has been very exactly between 1½ and 2 in. from the anterior spinous process of the ilium, in a straight line drawn from that process to the umbilicus. The point corresponds very accurately to the base of the appendix." He considers tenderness at this spot gives evidence of the disease during the first hours of an attack, and that no other acute disease presents this feature. Tenderness in the right iliac fossa is a very conspicuous symptom of appendicitis. As McBurney's point is about the centre of this fossa it may be the centre of the tender area. Beyond this the sign is not of any clinical value. It does not indicate either the starting point or even the chief point of the disease. It does not indicate the situation of the

diseased appendix, nor does it even correspond with the base of the appendix. So far from being peculiar to appendicitis tenderness at this point is common in healthy persons, and in colitis involving the cæcum, such tenderness may be acute. It seemed to the writer desirable to ascertain: (1) what structures are under the spino-umbilical line; (2) what differences, if any, the two iliac fossæ present; (3) what structures are precisely under the spot known as McBurney's point or Munro's point; and (4) why in healthy individuals tenderness is so common at a certain spot in the right iliac fossa and is not found in the left. At the request of the writer Dr. Arthur Keith has investigated these points. His conclusions are as follows:—

(1) The spino-umbilical line runs from the anterior superior iliac spine to the navel. The point at which it crosses the outer edge of the rectus is called "Munro's point" (Merkel). This line in the young male adult measures about 6 in., and Munro's point is on an average about 2·6 in. from the iliac spine. The structures which lie below the line are shown in Fig. 1, which represents a section made in the plane of the line in a female subject, aged 55, hardened by formalin. The ureter crosses the spino-umbilical line at the point of junction of its inner and middle thirds. The genito-crural nerve is close to it. The relations are the same on the two sides. The eleventh dorsal nerve enters the sheath of the rectus beneath Munro's point. The skin between the iliac spine and Munro's point is supplied mainly by the lateral cutaneous branch of the eleventh dorsal. Munro's point nearly corresponds to McBurney's, but has the advantage of more precise localisation. (2) The two iliac fossæ present the only anatomical difference that the cæcum is in one and the sigmoid flexure in

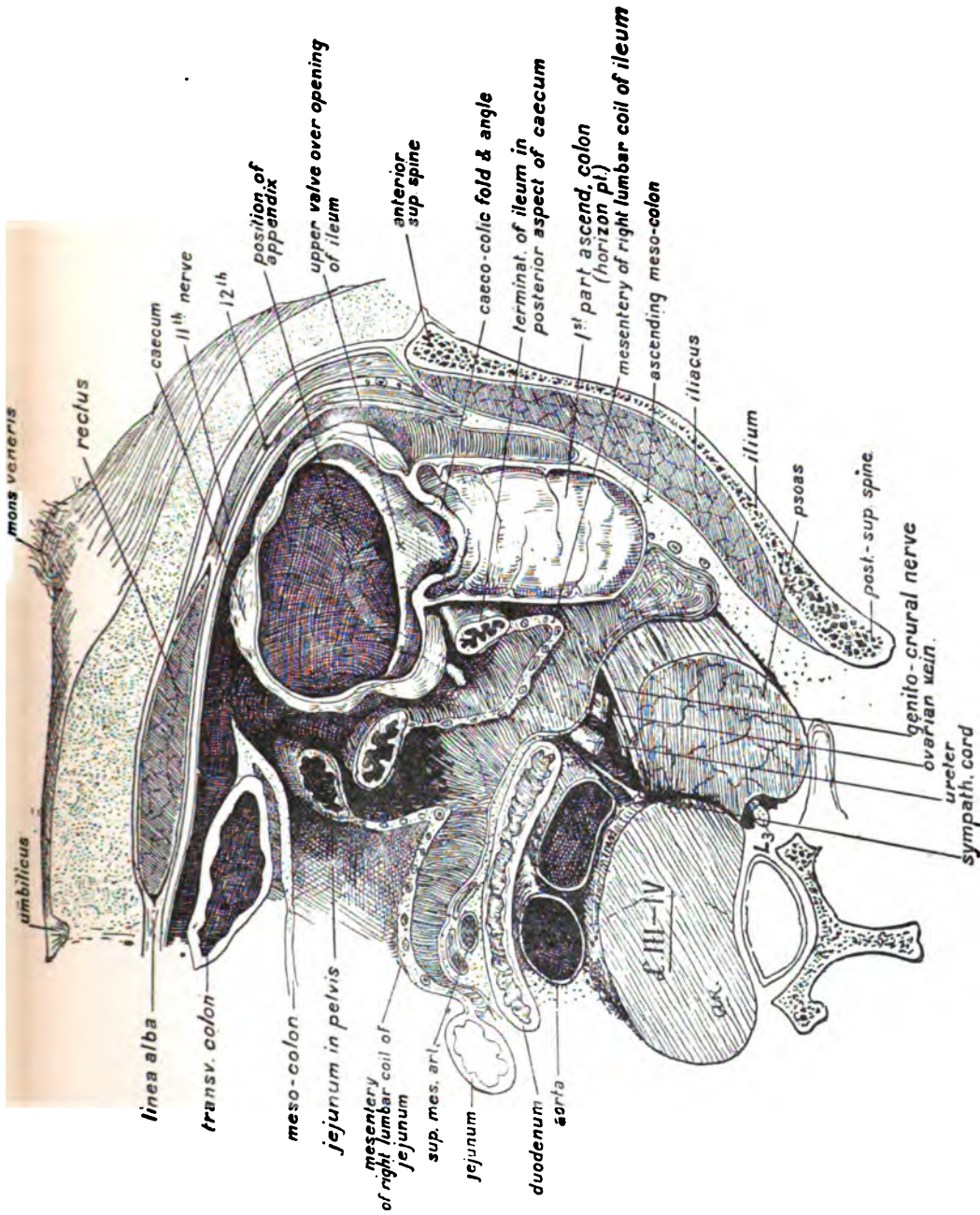


Fig. 1.—Oblique transverse section of female subject through anterior superior spine, umbilicus, and disc between third and fourth lumbar vertebrae.

the other. (3) The structure peculiar to the right side, which comes more or less precisely under McBurney's or Munro's point, is the ileo-cæcal valve (Fig. 2). In 22 instances the valve was situated under or near Munro's point, in 14 above and on the average external to it, and in 14 below and internal to it (Fig. 3). The base or opening of the appendix lies on an average rather more than 1 inch below the opening of the ileum. (4) The tender spot, which can be made out in so large a proportion of healthy individuals, seems to correspond to the ileo-cæcal valve. The tenderness is well defined, is elicited by deep pressure with one finger, and is represented by no corresponding sensitiveness on the left side. It will be found about the spino-umbilical line and in close proximity to the two "points" mentioned. Of 27 healthy medical students Dr. Keith found this sensitive area situated beneath the line and near to the rectus edge in 11, above the line in 9, and below it in 4. In 3 no special sensitive spot could be made out on deep pressure (see Fig. 4). The nerve-supply of the ileo-cæcal valve is through the eleventh or twelfth dorsal nerves, or through both. The innervation, like that of most orifices probably is elaborate.

A PHANTOM APPENDIX.—On palpating the abdomen over the iliac fossa in a patient suspected of appendicitis an elongated body which is often mistaken for a swollen appendix can occasionally be felt. It is either vertical or, more usually, oblique. The oblique phantom is always external to the vertical one. The discovery has been announced of a diseased appendix lying vertically or obliquely

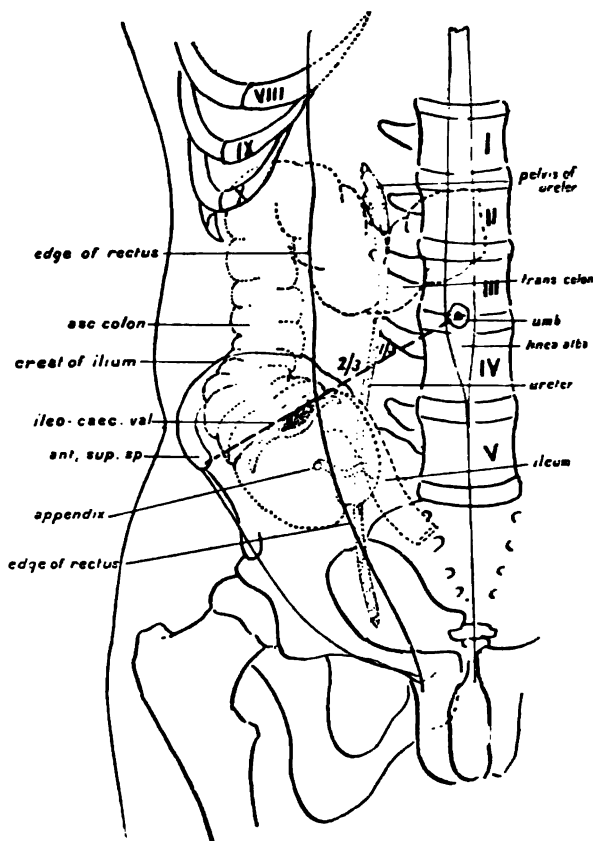


FIG. 2.—Showing the average position of ileo-cæcal valve, cæcum, appendix, and ureter, on spino-umbilical line.

in the iliac fossa. This phantom is due to muscular contraction, sometimes in the outer edge of the rectus muscle, sometimes in the fibres of the internal oblique and transversalis muscles. The bowel, the parietal muscles over it, and the skin over all, are supplied by the same nerve. Moreover, the eleventh dorsal nerve lies just beneath Munro's point, and is no doubt capable of being irritated by deep pressure in that region.

THE OPERATIVE TREATMENT OF APPENDICITIS.—A right estimate of the value of operation in appendicitis, and of the right moment of its application is obscured by conflicting statements and bewildering statistics.

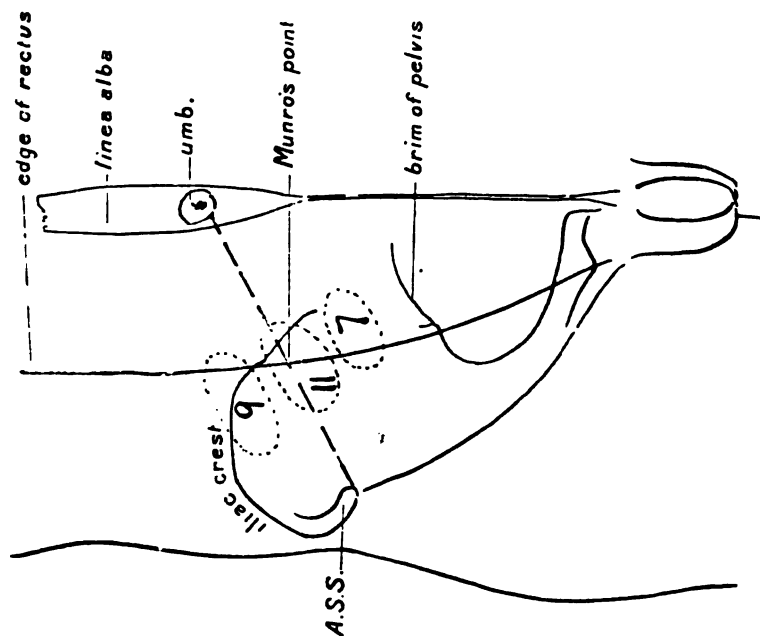


FIG. 4.—Showing diagrammatically the position of the tenderness elicited by deep pressure in the right iliac fossa in 27 students. In the lower group are included 3 students in whom no special tender spot could be found.

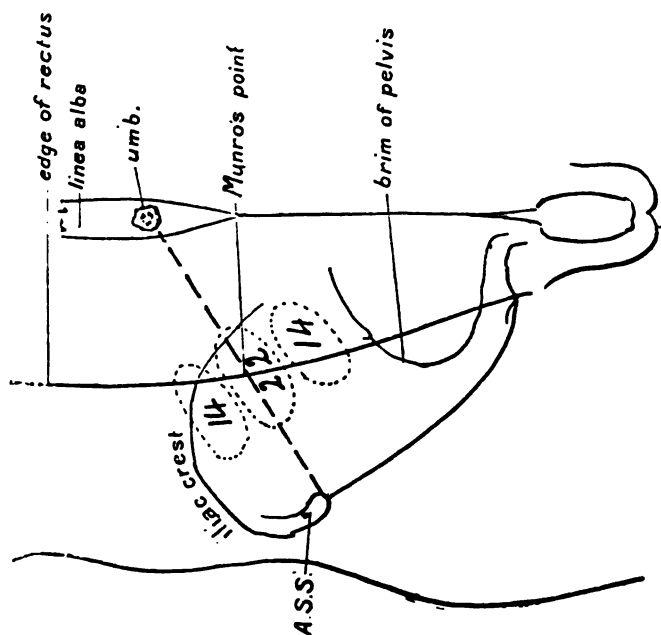


FIG. 3.—Showing diagrammatically the position of the ileo-caecal valve in 50 subjects (hardened by formalin).

OPERATION DURING AN ACUTE ATTACK.—In the advocacy of what may be termed indiscriminate operation it is misleading to use the expressions "gangrene, or rupture of the appendix," "perforation of the appendix," and "appendicitis with acute peritonitis," in the same sense as the terms "gangrene or rupture of the bowels." "Acute peritonitis" are employed in association with urgent operation. In every case of acute appendicitis of the accepted type there is acute peritonitis. Limited gangrene or limited perforation of the appendix may be recovered from without operation and without the formation of an evident abscess. In a large proportion of acute cases there is a perforation, although it may be microscopic. The writer has found a concretion lying outside a ruptured appendix one month after recovery from an acute attack, the affected area having been isolated by adhesions. The greater proportion of cases of appendicitis spontaneously terminates in recovery; probably the general mortality of the disease is not above 5 per cent. Operations during an acute attack are attended with considerable danger, which is probably expressed by a mortality of over 20 per cent. Relapses may occur after operation during the acute stage. The removal of the appendix during the quiescent period is attended with a trivial risk which may be expressed by a mortality of $\frac{1}{3}$ per cent. The pathology of the disease and its general mortality do not sanction opening the abdomen in every case of appendicitis as soon as the diagnosis is established. Immediate operation is demanded in all ultra-acute cases, *e.g.* in those very hopeless cases which present from the outset the phenomena of intense infection, and in which it is evident that a large dose of poison has suddenly been introduced into the system. In these cases

death may occur in 36 or 48 hours. In the same category are also included cases in which the symptoms resemble in acuteness those of perforated gastric ulcer. Immediate operation is demanded in every case in which there is a reasonable suspicion that suppuration has taken place. In other cases the question of operation may remain in abeyance for the first few days, usually until the fifth day or after. The writer lays stress upon the facts that the great majority of cases of appendicitis recover spontaneously without either an operation or the formation of an abscess, that the ultra-acute cases are rare, and that suppuration is uncommon.

OPERATION DURING THE PERIOD OF QUIESCENCE.—In a paper laid before the Royal Med. and Chirurg. Soc. in 1887, the writer suggested that cases of recurring appendicitis should be treated by the removal of the appendix during the period of quiescence. He has removed the appendix during the quiescent period over 1000 times with 2 deaths. When a patient has had one definite attack of appendicitis the appendix should be removed as soon as all active phenomena have vanished. He probably will have a second attack. The risk of the operation is infinitely less than the risk of such attack, and immunity can be obtained and a weight of doubt removed at a trifling sacrifice. If an attack has been attended by the formation of an abscess which has healed the operation of removing the appendix may be indefinitely deferred, since by suppuration the patient is usually cured. Should symptoms recur after the abscess has closed removal of the appendix should be advised. Complications arising from the abscess itself may also call for surgical interference.

In addition to the cases attended by abscess there are at least two types of appendicitis in which the question of removing the affected organ after the first attack may be reserved. A slight or moderate attack of appendicitis in a child which has definitely followed the lodgement of a mass of undigested food in the cæcum may never be repeated if the error in diet be not repeated. There are, moreover, cases in adults in which the attack appears to be produced by gross deviations from normal feeding. Such patients have no masticating teeth and "eat anything," habitually bolt their food, eat ravenously or have irregular meals, take a particular kind of indigestible food or constantly neglect their bowels. If these errors be corrected there may be no recurrence. These cases are not cited as affording definite exceptions to the general rule of operating but rather as cases in which there is no recurrence after the primary outbreak. Removal of the appendix is also to be recommended in chronic appendicitis, and in cases without actual attacks, but with abiding discomfort in the right iliac fossa with exacerbations.

AMERICAN JOUR. OF MED. SCIENCES,
May, p 772.

**Kernig's Sign on One Side as a Symptom
of Brain Disease.**

By JOSEPH SAILER, M.D.

Kernig described in 1883 the sign which is named after him. He found that a patient recovering from epidemic cerebro-spinal meningitis could walk perfectly well and lie in bed with legs extended, but when seated in a chair she could not extend the legs on the thigh beyond a right angle. Subsequently he

studied 15 cases of meningitis 9 of which were confirmed by necropsy, and found this sign in all. It could be elicited whether the patient sat up or lay on the back or on the side. He described it as a flexion contracture in the legs (and occasionally in the arms) when the thigh is flexed to a right angle upon the trunk. Any attempt to extend the leg on the thigh meets with severe resistance from contraction of the hamstring muscles, and it is impossible to extend the leg beyond an angle of 135° , or even, in extreme cases, beyond a right angle. When the thigh is extended the hamstring tendons are relaxed and soft; but when the thigh is at a right angle to the trunk and an attempt is made to extend the leg they become tense and prominent. The contraction is not ordinarily associated with increased rigidity in any other part, and Kernig particularly noted that the retraction of the head did not become greater when the patient sat up. He states that the sign usually persists long into convalescence; it may vary from time to time in the course of the disease. Herrick found Kernig's sign in 17 of 19 cases of meningitis. Of 100 cases of other disease he found it in only 2. One of these was a case of subdural hæmorrhage; the other a case of gonorrhœal arthritis of one knee. The patient had lain with the knees flexed for 4 weeks; the sign was present in the unaffected limb ("REVIEW," Vol. II., p. 600). He failed to observe it in cerebral hæmorrhage, brain tumour, and other intracranial conditions. It has also been found by Widal and Merklen in a case of clot pressing upon the anterior surface of the pons and medulla ("REVIEW," Vol. III., p. 98), and by Thyne in a case of hæmorrhage into the left lateral lobe of the cerebellum, over the right occipital lobe, and into the fourth ventricle ("REVIEW," Vol. IV., p. 171). There was also retraction of the head, but meningitis was not

present. The sign is more often absent in tuberculous than in any other form of meningitis. With the exception of Herrick's cases mentioned above, the unilateral occurrence of Kernig's sign has not been described. During the past year Dr. Sailer has had under his care in the Philadelphia Hospital 2 cases in which the sign was unilateral and appeared to be a symptom of focal encephalitis.

A man, aged 20, was admitted on Sept. 16, partially delirious but able to answer simple questions. He complained of severe headache and pains all over the body. The temperature was 104° ; there were slight abdominal tenderness and occasional dry cough. For about 2 weeks he had been complaining of pain in the side, backache, and headache. On Sept. 14 he came home from work complaining of intense headache and soon became delirious; he was not able to sleep, and next day became violent. He had diarrhoea with watery, yellowish stools.

The pupils were equal and reacted to light and accommodation; the tongue was heavily coated. Next day he was acutely delirious. The head was slightly retracted, although the muscles of the neck were not hard. The left arm was strongly flexed and rigid. The reflexes were not exaggerated. Kernig's sign was readily elicited in the left leg. The right leg could be extended in an almost straight line with the thigh when the latter was flexed at right angles to the abdomen. There were a slight increase in vocal resonance at the base of the left lung and numerous subcrepitant rales at both bases. The urine contained albumin and numerous granular and blood casts. On Sept. 18 he was worse and complained of pain in the precordial region. When roused there was distinct lagging of the left upper eyelid. The mouth was drawn toward the right and

the right side of the face was wrinkled, while the left was smooth. Next day the head was turned to the left and the left pupil was smaller than the right. The tongue was dry and rough and protruded to the left side. There was marked flexor spasm in the left arm, which also seemed to be paretic. The right arm was moved freely. The knee-jerks were slightly increased, especially the left, and Kernig's sign was present in the left leg, which was slightly paretic. On Sept. 20 the head was turned strongly to the left and could not be forcibly turned in the other direction. The left arm was firmly flexed at the elbow, and resisted straightening. The right leg was not moved voluntarily. In the left leg occasional irregular movements were noted. Kernig's and Babinski's signs were both present on the left side but not on the right. The apex-beat was in the fourth interspace in the nipple line. A systolic murmur was heard most distinctly at the apex, and the second pulmonic sound at the base was accentuated. Purpura appeared over the entire body and hæmorrhages occurred under the conjunctivæ and in the mucous membranes of the lips and mouth. He could not be roused. The head was retracted and rotated to the left. The right pupil was widely dilated and reacted promptly to light; the left was contracted and reacted very slowly; there was persistent drooping of the left eyelid. Respiration was of the Cheyne-Stokes type. The pulse showed remarkable alteration: it was full, rapid, and receded quickly—a typical water-hammer pulse. The left arm was flexed over the chest and could not be extended by force; the right foot was not moved even when the sole was vigorously irritated. There was marked ankle-clonus on both sides. The knee-jerks were increased, especially the left. Kernig's and Babinski's signs were present only on the left side. The

patient was unconscious but groaned occasionally. The staphylococcus aureus was found in the blood in pure culture. On Sept. 21 death occurred.

NECROPSY.—Hæmorrhages were found in all the serous membranes. The anterior and left aortic leaflets were partially destroyed, and the edges showed recent inflammatory vegetations. The spleen was enlarged and soft; the kidneys showed cloudy swellings; the meninges were congested, and there was a softened area in the right motor region. The right tibia was slightly deformed, and the seat of old osteomyelitis, the marrow having been largely converted into compact bone, and the compact substance being unusually dense. It was supposed during life that meningitis existed. As a matter of fact the membranes were intensely congested and œdematous, and over a small area of the ascending frontal gyrus at the level of the second frontal convolution they were slightly altered. The main lesion in the brain consisted of an area of hæmorrhagic softening in the middle of the ascending parietal convolution, extending inward through the centrum ovale toward the internal capsule, which, however, it did not involve. Surrounding this was an area of partial discolouration, a few mm. wide, apparently due to œdema. The staphylococcus aureus was cultivated from the brain and gall-bladder. The lesion in the brain consisted of hæmorrhagic extravasation surrounded by a layer of polynuclear cells, in the midst of which there were numerous masses of cocci. The surrounding brain tissue showed swelling of the ganglion cells and thickening of the glia.

The case, therefore, is an example of acute malignant endocarditis, staphylococcic infection, and associated focal encephalitis. Perhaps the organism remained latent in the right tibia, and then, for some reason, invaded

the body, producing the endocarditis and subsequently the various pyæmic manifestations.

The mechanism of Kernig's sign is obscure. Chauffard explains it as an exaggeration of normal phenomena, due to a hypertonicity of the muscles, and closely analogous to retraction of the muscles of the neck and back. In this case there was spastic paresis of one side of the body, due to a cerebral lesion. This spasticity did not produce retraction of the hamstring muscles when the leg was extended, but gave rise to Kernig's sign when the thigh was flexed upon the trunk.

LANCET, July 12, p. 68.

Inequality of Pupils in Thoracic Aneurysm.

R. CECIL B. WALL, M.A., M.D.

Hitherto the explanation of the inequality of the pupils in aneurysm of the thoracic aorta has been interference with the sympathetic nerve. But there may be inequality of the pupils without evidence of implication of that portion containing dilator fibres for the pupil. It was therefore supposed that some influence was exerted through the nerve filaments of the sympathetic which supplied the sac wall of the aneurysm. But in the majority of aneurysms of considerable size the sac consists, to a large extent, not of the original arterial coats but of the surrounding structures compressed or eroded. Moreover, though inequality of the pupils is common in thoracic aneurysm, other signs of interference with the sympathetic system are rare. In a case of implication of the left sympathetic in a new growth not only was there contraction of the left pupil but also inability to dilate on shading and partial inability on instilla-

tion of cocaine ; in addition there were enophthalmos, pseudoptosis, and anidrosis (as tested by pilocarpine) of the left side of the face and neck. In cases of inequality of pupils with aneurysm of the thoracic aorta no instance was found of interference with the normal pupillary reflexes, of enophthalmos, exophthalmos, pseudoptosis, or retraction of the lids, or of abnormality of the vaso-motor or sudoriparous systems. Further, myosis of nervous origin is usually well marked, whereas the inequality of the pupils in thoracic aneurysm is seldom great and often only demonstrable when the pupils are moderately dilated in a dim light. Hence, some other causes for the inequality must be sought.

VASCULAR CONDITIONS MAY INFLUENCE THE SIZE OF THE PUPILS.—In acute iritis the pupil is small, probably from vascular turgescence. When the general blood-pressure is markedly increased—for instance, in chronic interstitial nephritis—small pupils are common. On the other hand most states in which the blood-pressure is low, *e.g.*, typhoid fever, chlorosis, and syncope, are characterised by large pupils. The relation between the arterial blood-pressure and the size of the pupil is probably due to the spiral condition of the vessels of the iris. A rise of blood-pressure tends to lengthen them and to narrow the pupil, *vice versa* a fall of blood pressure to shorten them and enlarge the pupil.

If alterations in the general blood-pressure can lead to changes in the size of the pupils, inequalities in the local blood-pressure may be expected to lead to inequalities in the size of the pupils. Local inequalities of blood-pressure are common in aneurysm. Such differences in the volume of the pulse are not infrequently the result of conditions which facilitate or retard the flow of blood from the

aorta into one or other of the great vessels and the inequality may also exist in the vessels of the iris if atheroma in the circle of Willis prevents rapid equalisation of blood-pressure.

CLINICAL EVIDENCE.—If in a case of thoracic aneurysm the pupils and the radial pulses are unequal the radial pulse is commonly greater on the side on which the pupil is smaller. Of 26 consecutive cases of inequality of the pupils associated with thoracic aneurysm in the London Hospital during the last 4 years, in 11 the radial pulse was larger on the side on which the pupil was smaller, in 8 the radial pulses were equal, and in 7 the larger pulse and the larger pupil were on the same side. It does not follow that because there is inequality of the radial pulses there must necessarily be a similar inequality in the ophthalmic arteries. It seemed that there would be less risk of fallacy if the relative size of the temporal arteries was recorded and compared with the size of the pupils ; since the observations have been thus recorded the smaller pupil has always been found to correspond to the larger temporal pulse.

EXPERIMENTAL EVIDENCE.—If a rabbit be anæsthetised and its carotid artery exposed and separated from its sheath, compression of the artery sufficient to abolish circulation through it may produce a slight alteration of the pupil. The effect if any, is an enlargement of both pupils. This is by no means constant, but is best seen with pupils moderately contracted at the outset. If the animal be now killed and water forcibly injected into one carotid artery the pupil on that side contracts. The fact that closure of one carotid artery does not produce in rabbits a marked or even definite inequality of pupil is due to two factors. The communication

between the vessels at the base of the brain is free, and the vertebral arteries play a great part in the arterial supply. In man digital pressure on one carotid artery sufficient to abolish or considerably reduce the temporal pulsation on that side causes the following events. The pupil on the same side gradually enlarges and remains enlarged so long as the pressure is maintained. A little later the opposite pupil enlarges. This pupil, in certain individuals, eventually reaches the size of that upon the side of pressure, but does not usually do so. Ordinarily a condition is obtained in which both pupils are larger than before, and that upon the side of pressure larger than the other. On removing the pressure the pupils gradually regain their normal size, that on the side of pressure contracting earlier than its fellow. The writers attribute the enlargement of the pupil on the same side to the immediate fall of pressure in the ocular vessels from the compression of the carotid artery, and the subsequent enlargement on the opposite side to the general fall of pressure in the circle of Willis. They believe that in most persons the communication at the base of the brain is not sufficiently free to equalise this pressure after the closure of one carotid artery in the neck, and inequality of pupils results. In aneurysm this is likely to be even more marked in consequence of the atheroma usually present. This would considerably affect compensatory flow through the communicating arteries, rendering them rigid and less easily dilatable. When ultimate equality of the dilated pupils shows itself in this experiment it is probably due to unusual freedom of communication through these communicating vessels in the individual concerned. The phenomena are not due to pressure on the sympathetic, for other evidences of its paralysis are absent, and both

the pupils share in the effect. Nor are they due to a cervical reflex, for the enlargement is asynchronous and asymmetrical; and similar pressure may be made upon the neck allowing the carotid artery to slip aside without producing any such result. Further, on release of pressure the return diminution of the pupils occurs by a series of small waves or oscillations synchronous with the pulse in the carotid. In cases of aneurysm with unequal pupils pressure on the carotid artery on the side of the small pupil causes its enlargement. That this effect is purely vascular is again suggested by the fact that one patient volunteered the statement that he temporarily lost the vision of the eye concerned while the compression lasted.

MÜNCH. MED. WOCH., April 1, p. 513.

The Surgical Treatment of Puerperal Pyæmia.

By F. TRENDLENBURG.

About half the cases of puerperal sepsis are pyæmic, and in them general infection occurs exclusively through septic thrombosis of the uterine veins. In the remainder the septic process spreads by the lymphatics and peritoneum. In a few, both the veins and lymphatics are implicated. Every case of pyæmia begins as a localised thrombosis of the veins directly impinging on the wound, and general infection occurs only after particles of the thrombus, which steadily advances, have repeatedly been dislodged and have entered the circulation. If the primary thrombus were removed and the vein were ligatured on the central side sufficiently early, general infection should be prevented. Puerperal pyæmia has the same morbid anatomy and runs the same course as aural

pyæmia, in which the operation of clearing out the transverse sinus and ligaturing the internal jugular vein has been eminently successful. In puerperal pyæmia the technical difficulties, though greater than in aural, are not insuperable. The venous plexus of the puerperal uterus is composed of many large veins, which communicate in the middle line freely, and join two large trunks—the internal iliac and ovarian veins. It is often impossible to decide on which side the thrombus is situated. In about two-thirds of the cases it is bilateral. If, therefore, there is any doubt, the rule should be first to ligature both internal iliac veins, which are affected twice as often as the ovarian, and to leave the ovarian veins alone, unless they can be felt to be thrombosed. The operation should last at the longest 1 hour. Then, if the pyæmic symptoms (rigors) continue, one or both ovarian veins should be ligatured.

The operation should be performed extraperitoneally. The incision is the same as for ligature of the external iliac artery, *i.e.*, from a thumb-breadth above Poupart's ligament in the line of the epigastric artery to 2 in. internal to the anterior superior spine of the ileum. After division of the skin, muscles, and transversalis fascia the peritoneum is peeled off the iliac fossa until the external iliac artery is reached. The peeling is then continued towards the true pelvis. The ureter is freed and held aside and the internal iliac artery is exposed. The internal iliac vein, which is behind the artery, should be ligatured close to its junction with the external iliac. It is advantageous for the patient to be in Trendelenburg's posture. By prolonging the incision inwards (the epigastric artery is divided with the abdominal wall) the parametrium is easily reached extraperitoneally. The broad ligament is pushed upwards, or

divided at the internal inguinal ring. When the parametrium is exposed as far as the vaginal fornices, the vessels and ureter contained in it can, with suitable illumination, be thoroughly inspected, and if necessary ligatured. By prolonging the incision upwards to the tip of the eleventh rib (Israel's incision for exposure of the ureter), the peritoneum can be freed as far as the vertebral column. The ovarian vein, which in the puerperal woman is a large trunk, is then seen crossing the ureter at an acute angle. If thrombosed, it should be freed from the ureter above the thrombus, ligatured, and divided, its lower thrombosed portion being resected as far as possible. In early cases the thrombus should be removed after ligature of the veins. In a later stage owing to adhesions this is probably impossible without opening the peritoneum, and might result in violent hæmorrhage. If the thrombus has extended through the internal into the common iliac vein or the vena cava, if there is periphlebitis of the ovarian vein with small abscesses containing offensive pus and gas and extending as far as the vena cava, or if the lymphatics and glands contain purulent fluid, the time for successful operation has passed, or the case was never suitable for the treatment. Such were the conditions in 4 acute cases in which the writer operated unsuccessfully. The indications for the operation are repeated rigors without discoverable cause. As every pyæmic rigor indicates the entry of a fragment of septic thrombus into the circulation the operation should probably not be deferred after the occurrence of a second severe rigor. If the process, however, is more chronic ligature of the veins at a later stage may save life, as in the following case :—

A multipara, aged 35, had on Aug. 31, 1901, an abortion at the third month. On Sept. 6

the uterus was curetted. Pyrexia and repeated rigors then appeared. On Sept. 16 she was admitted to hospital with the diagnosis of pyæmic pyosalpinx. There was a tender swelling of the size of a hen's egg in the right parametrium. Pyrexia and rigors continued, and on Sept. 19 an abscess in the right broad ligament was opened from the vagina and drained. The rigors continued almost daily. On Oct. 12 the writer doubly ligatured and divided the right internal iliac vein close to the junction with the external iliac. The vein beyond the ligatures was slightly discoloured but appeared not to be thrombosed. For 10 days after the operation no rigor occurred, although in the 26 days preceding it there had been 30 rigors, and the general condition improved. On Oct. 22 there was a relapse. The rigors, at first slight, increased in severity and frequency until, by Nov. 12, there were 2 daily, each lasting for from 30 to 90 minutes. There were extreme emaciation and asthenia. On Nov. 12 the right ovarian vein was exposed opposite the lower end of the kidney and a piece 2 in. long, which contained a greyish-yellow thrombus with numerous streptococci, was resected. The vein above was healthy. There were 6 slight attacks of shivering, not amounting to rigors, between the fifth and the sixteenth day after the operation. On Nov. 28 a subcutaneous metastatic abscess was opened in the right scapular region. Irregular pyrexia persisted for some time, but the patient slowly improved and was discharged weak but apyretic on Feb. 8, 1902.

This is probably the first case of puerperal pyæmia which has been cured by the ligature of veins. Both Freund and Bumm have ligatured the ovarian veins for puerperal pyæmia unsuccessfully. The thrombi ex-

tended into the vena cava or the deeper uterine veins. Both surgeons operated from the peritoneal cavity, and both neglected to ligature the internal iliac veins, though in puerperal pyæmia these are of far greater importance than the ovarian.

WEST LONDON MED. JOUR., July, p. 198.
Epileptiform Convulsions and Death
 following Washing out of an Empyema.
 By STEPHEN PAGET, F.R.C.S.

A man, aged 38, was admitted to hospital on March 29 with left empyema after pneumonia. A week before the empyema had been aspirated and 3 pints of pus had been drawn off. On March 31 the usual operation was done and nearly 3 pints of pus were let out. He was greatly relieved, and did well. On April 5 he began to have temperatures of 100° or 101° every evening. On April 18, as the discharge was still profuse, the evening temperature still elevated, and the way into the cavity rather long and tortuous, washing out of the cavity was ordered. This was done twice without harm. On the third occasion not more than 6 ounces of lotion were used and the patient, as bid, coughed it out. He then shivered slightly, and immediately became unconscious. This happened at 3.30. The left side of the face was drawn and occasionally convulsed; the left arm was rigid, flexed at the elbow, and occasionally convulsed; the right side of the body was relaxed and motionless. The pulse was about 90 and strong; the breathing was rather slow, fairly deep, and slightly stertorous; the face was of good colour. About 4.30 he became restless keeping up a sort of laughing cry, moving

his head from side to side, and throwing his left arm above his head. The convulsions ceased and he seemed less deeply unconscious. From 7 to 8 he was kept under the influence of chloroform. At 8.30, as he was still restless, he was given morphia, and became quiet. At 10.30 respiration suddenly became very slow and shallow and almost stopped and he vomited. The pulse remained good. A small hypodermic injection of strychnine was ordered every hour, and it was directed that he should be "kept going" by friction or stimulation of the skin, so as to keep him moving and from time to time drawing deep breaths. He seemed for a time to improve, but about 4 hours later more severe convulsive attacks again began. He never regained consciousness, and died at 10 a.m. the next morning. The necropsy showed only slight congestion of the vessels at the base of the brain. The lung on the affected side was collapsed. All the other organs were healthy.

An empyema should never be irrigated unless the discharge is fetid and the patient is suffering from septic absorption. In this case there were no reasons to justify irrigation. After washing out empyemata reflex changes short of syncope or convulsions have been observed. In a youth, aged 19, every irrigation was followed by a rise of temperature to 100° . In another case the temperature rose after a single irrigation to 104° , but fell to normal next day. In several cases there have been vaso-motor changes—patches of redness, oedema, or sweating in the neighbouring skin. These slight and transient disturbances of the temperature or of the vaso-motor system seem to show that syncope, convulsions, and death after irrigation are also due to reflex action. None

of the other explanations that have been put forward—cerebral embolism, epilepsy, or carbolic acid poisoning—are adequate. In nearly all the cases an excessive quantity of lotion was used, or the irrigation was given somewhat roughly, or the patient complained of pain. The following 7 cases, out of more than 20 published, are especially valuable :—

(1) 1867.—A man had right empyema, which was treated by puncture, counter-puncture, drainage, and irrigation with plain water. On the twenty-fourth day he complained that the irrigation was *painful*, turned pale, and fell back. Pulse and respiration were imperceptible for about a minute, then there were convulsive movements of the limbs, foaming at the mouth, trismus, and opisthotonos. The face became turgid, and large thrombi appeared in the upper eyelids. There was unconsciousness with involuntary evacuation, then stertor and coma lasting about an hour, then loss of power in the right arm, which lasted a few days.

(2) 1871.—A boy had left empyema, which was treated by incision and irrigation with warm water. *The water was thrown into the chest with an enema-pump.* On the sixth day *some violence was used in irrigation.* He lost consciousness, stopped breathing, and was convulsed and cyanosed. He remained unconscious, with Cheyne-Stokes respiration, trismus and involuntary evacuation, and died that evening, with temperature 104° .

(3) 1873.—A man had left empyema which was treated by incision and irrigation with alcoholised water. On the eleventh day irrigation was performed *while he sat up in bed*, and was followed by syncope. He revived, and that evening he *again sat up, and irrigation was performed.* He became unconscious and there

were convulsions, trismus, conjugate deviation to the right side, and sweating. Then he became comatose with stertorous breathing. Eight hours later the convulsions returned, and he died in 3 hours.

(4) 1875.—A man had left empyema which was treated by incision and irrigation with carbolic lotion. On the fifth day irrigation was followed by *pain*, then by syncope, convulsions, opisthotonos, and death in 6 hours.

(5) 1875.—A girl had right empyema which was treated by puncture, drainage, and irrigation with carbolic lotion. On the thirty-fourth day irrigation, *while she sat up in bed*, was followed by syncope. The right side of the face and the right arm were for a short time white and swollen. There were sweating of the head and neck, slight contraction of the arms, and transient paralysis of the right side of the face. She never recovered consciousness, and died in 9 hours.

(6) 1877.—A man had right empyema which was treated by repeated punctures and irrigation through the cannula with a weak solution of iodine. *After 6 weeks a rather larger quantity of the lotion* was used for the purpose of measuring the cavity. He was at once seized with convulsions and his temperature rose to 107°. He died in 16 hours.

(7) 1881.—A young woman had right empyema which was treated by incision and irrigation. On the thirty-second day *a larger quantity of lotion* was used. Headache, confusion of thought, and large roseolar patches over the face and limbs followed. These strange results occurred again and again after irrigation for several days, *but not when care was taken to perform the irrigation gently*. On the forty-second day *this precaution was neglected*. The headache, confusion of thought, and roseolar patches

again occurred, and the patient cried out, lost consciousness, and stopped breathing. She was pale and sweating, with trismus, and foaming at the mouth, and there was involuntary evacuation. Artificial respiration was performed, and she recovered in half an hour.

In some cases the convulsions may have been due to cerebral embolism, or may have occurred in a patient subject to epileptic fits. But there remain many cases in which syncope, convulsions, paralysis, and often death, were due only to irrigation. The most careful necropsy failed to show the slightest signs of cerebral embolism. The writer suggests that in the treatment of such cases bleeding might be useful.

See also "REVIEW," Vol II., p. 115.

BERLIN. KLIN. WOCH., June 9, p. 538.
Acute Ascending Paralysis in Graves' Disease.

By Dr. M. ROSENFELD.

Paraplegia in Graves' disease usually beginning as a sudden giving way of the legs (*effondrement des jambes*) was first described by Charcot. There may be complete paraplegia or only weakness. The knee-jerks are diminished, but sensibility and control over the sphincters are retained, and there is no muscular atrophy. In some of the reported cases the "paresis" was probably due to the extreme weakness of the last stage of the disease; in a considerable number, however, paraplegia suddenly appeared early before nutrition had appreciably suffered. More rarely hemiplegia or monoplegia may occur. The diagnosis of these conditions from hysteria is difficult. The following case in which acute ascending paralysis ushered in the final cachectic stage of Graves' disease is probably unique.

A man, aged 19, was admitted to hospital on June 13, 1901. He had suffered from increasing nervousness, flushings of the face, hyperidrosis, thirst, and insomnia for 2 years. He had previously had "brain fever." In the autumn of 1900 his condition rapidly deteriorated, and emaciation and exophthalmos were noticed. On June 11, 1901, there were headache and nausea. On June 12 these continued and lumbar pain and a tired feeling in the legs appeared. He followed his employment as a merchant till June 13, when he went to business at 6 a.m. After working for 2 or 3 hours the tired feeling in the right leg increased, and shortly after the left leg became weak. At 11 a.m. he became collapsed and was taken to hospital. There were tachycardia and profuse sweating. The temperature and urine were normal. The thyroid gland was enlarged and the eyes were prominent. The fundi were normal. The right leg was completely paralysed and the right knee-jerk was absent. A few hours later the left leg became paretic; the left knee-jerk was feeble but present. The trunk muscles were next involved. At 8 p.m. the reflexes had returned, but the right knee-jerk was less marked than the left. The temperature was 100.2° . The paralysis, however, had ascended, and affected both legs, the arms, and trunk, so that sitting was impossible. The abdominal muscles were paralysed, but the diaphragm acted and respiration was unaffected. The head could not be moved. There was retention of urine. The cranial nerves were unaffected. At 10 p.m. the body, especially on the legs, was covered with perspiration, and the power to move the limbs was returning. Next day the paralysis had disappeared leaving great weakness, especially of the right leg. On June 14 the pulse was 80, the respirations were

28, and the exophthalmos was but slight. On June 24 the paralysis recurred but the attack was less severe and lasted only a few hours. There was severe pain in the right thigh. On June 28 the right leg was paretic and painful. The patellar reflexes were almost absent. The superficial reflexes were all less active on the right side than on the left.

The attack on June 13 marked the beginning of a rapid advance in the symptoms of Graves' disease. The exophthalmos, which was more marked on the right side than on the left, became extreme, the goitre increased, flushings alternated with pallor, and there was dermatography. Tachycardia increased, and on July 13 there were great bodily and mental restlessness, tremors of the hands, a pulse of from 100 to 120, hyperidrosis, and rapid emaciation. On Aug. 7 polydipsia was complained of, and the pulse was 170. On Sept. 9 the patient looked wretchedly ill, and reeled when walking. On Oct. 9 there was complete loss of memory and nocturnal delirium. On Nov. 21, when last seen, the cachexia was extreme. There were no signs of hysteria, and the absence of knee-jerk on the right side, the implication of the bladder, the completeness of the paralysis, which prevented him from flinching when hurt or during the passage of catheter, and the extreme initial collapse negated it. Again on the successive appearance of paralysis in different parts the nerve trunks became painful and tender. The condition exactly resembled that of a curarised animal, and was probably due to an acute intoxication. The toxin probably affected the peripheral nerves and muscles, and not the spinal cord, as although the symptoms suggested Landry's paralysis, the bulbar nuclei were unaffected.

LA PRESSE MÉDICALE, June 21, p. 591.

Serous Meningitis.

By P. LECENE and H. BOURGEOIS.

In the course of suppurative otitis media there are sometimes cerebral symptoms which suggest intra-cranial abscess or suppurative meningitis. The mastoid is trephined, the cerebral fossa is opened, and the brain is punctured but no abscess is found. But when the lateral ventricle is opened there escapes, under pressure, some cerebro-spinal fluid. The patient improves and in a few days is cured. The writers call this complication of suppurative otitis media, serous meningitis. Its development may be rapid or slow, and it may last for some months.

CASE 1.—A man, aged 18, had a severe attack of typhoid fever, which lasted 3 months. During convalescence he had a double suppurative otitis media. Five days after the otitis began he suddenly felt severe pain in his head. Next morning there were general convulsions, the pupils were dilated, the face was puffed, the respiration was stertorous and slow, the pulse 130 and small, the temperature 101.6° . Every 5 minutes tonic convulsions occurred, and were followed by clonic ones. They began in the face, and spread successively to the upper and lower limbs, lasting about 2 minutes, and being followed by great prostration. Between the seizures the breathing was even slower. Both sides of the body were equally affected. Three and half hours after the first seizure the right mastoid antrum was opened without an anæsthetic. Neither pus nor osteitis was found. The roof of the antrum and the squamous part of the temporal bone were then lifted; the dura mater was much congested, very tense, and did not pulsate. When it was incised the brain bulged into the opening. The pia mater was

œdematous, and traversed by large swollen vessels. Suspecting an abscess in the brain a hydrocele trocar was introduced into the temporo-sphenoidal lobe in 4 directions—forwards, backwards, upwards, and downwards. No pus was found, but as the needle was being drawn out after the last puncture, made directly downwards, a jet of clear cerebro-spinal fluid escaped under pressure. The fluid amounted to between 20 and 30 gm. As the otitis was bilateral a similar operation was performed on the other side, in the hope of finding a cerebral abscess. The antrum contained a drop of pus. The pia mater was œdematous and congested. Punctures were made in 4 directions as on the other side, and about 15 gm. of clear cerebro-spinal fluid escaped. Then the convulsions, which during the operation occurred every 5 minutes, suddenly ceased. In the evening the temperature was 97.5° , the pulse 120, and the respiration quiet. The dressings were soaked with serous fluid. Next day the temperature was 98.7° and the pulse 100. Six days after the operation there was a sudden attack of tonic and clonic convulsions, which began in the face and spread to the limbs, affecting especially the right side. Consciousness was not lost, though the attack lasted nearly an hour. Recovery was complete except for a little deafness in the right ear.

The writers have collected the following cases:—

CASE 2.—(Broca and Laurens).—A boy, aged 13, had right otorrhœa for 5 years. In 1898 a cholesteatoma was diagnosed, and in 1899 the petro-mastoid was trephined. Some weeks after the operation there was a feeling of weight on the head. Early in Aug. there was weakness in the left leg which gave way, causing a fall. In Aug. and Sept. there was occasional pain on the vertex. In Oct. a

second fall occurred through sudden weakness of the left leg; the headache became more severe. Towards the end of Oct. he again fell and lost consciousness. In Nov. the cerebral trouble became worse, the headache became more frequent and severe, but was intermittent, and only rarely occurred at night. Falls occurred almost daily, suddenly, and without premonition. Usually there was no loss of consciousness. There were almost daily febrile attacks, with vaso-motor congestion of the face and coldness of the limbs. Rigors occurred, with chattering of the teeth, especially after food. Vertigo was common and affected the patient when sitting or lying, and he complained of defective vision in the left eye. Intracranial abscess was diagnosed. There was right-sided papillary stasis. Permanent paresis of the left arm developed, with loss of memory, and hesitation of speech, and, sometimes, aphasia. In Dec. the temperature fluctuated between 100° and 102°, the pulse between 60 and 70. The roof of the antrum was removed. The dura mater appeared normal and pulsated. The cerebrum also looked healthy. It was punctured with a bistoury and with a cannula, and after one of the exploratory punctures a jet of cerebro-spinal fluid escaped, probably from the lateral ventricle. The temperature fell to 98·5° and remained there. Next day the patient felt much better. Paresis diminished. Eighteen months after the operation the general condition was good. The headache had disappeared but there were still a sensation of weight at the vertex and paresis of the left arm. Four months later the child was quite robust, the left hand was still somewhat feeble, but the headache had returned.

CASE 3.—Cassels (*Brit. Med. Jour.*, Jan., 1874).—A child, aged 12, with double otorrhœa, developed violent headaches, with vomiting

and double strabismus. Then dimness of vision, facial paralysis, and aphasia supervened. For 6 days there was some improvement, then violent headache with delirium and convulsions occurred and the child died. The duration of illness was 2½ months. The necropsy showed congestion of the pia mater and an accumulation of 6 ounces of clear fluid at the base of the brain. The dura mater over the petrous temporal bone was thick and vascular and there was double suppurative mastoiditis.

CASE 4.—Mayo Robson (*Brit. Med. Jour.*, Dec., 1890).—A child, aged 10, had left otorrhœa, fever, rapid pulse, right hemiplegia and aphasia. There were tonic spasms of the thumb. The child became semi-comatose, and there was papillary stasis on both sides. Cerebral abscess was diagnosed, and the skull was opened over the Rolandic area. No abscess was found, but on puncturing the lateral ventricle 6 drachms of clear fluid escaped. Recovery followed.

CASE 5.—Byrom Bramwell (*Edinburgh Med. Jour.*, 1894, p. 1085).—A patient, aged 20, had intense headache and vomiting, with convulsions which were attributed to hystero-epilepsy. There was double papillary stasis. The temperature was normal, the pulse 72. There had been a left-sided otorrhœa for 6 weeks. Cerebral abscess was diagnosed. Trephining did not reveal an abscess, but a large quantity of cerebro-spinal fluid escaped on puncturing the lateral ventricle. The convulsions ceased, the papillary stasis disappeared in 2 days, and recovery was complete in a month, and has persisted.

CASE 6.—Joél (*Deut. Med. Woch.*, Feb., 1895).—A child, aged 11, had Stacke's operation performed for chronic otitis. Two months later headache and vomiting commenced. In 2 days there was complete coma

with convulsive attacks which began in the face, and spread to the upper and lower limbs. There was no fever and the pulse was 120. The child apparently *in extremis* was trephined. The roof of the antrum was lifted, the dura mater appeared healthy but tense. On incision clear liquid escaped under pressure. The brain appeared cedematous and congested. On incision no pus escaped, but there was an immediate improvement. In 2 months the patient was well.

CASE 7.—Schmiegelow (*Zeit. für Ohrenheilk*, 1896, p. 135).—A child, aged 12, had otorrhœa, headache, vertigo, vomiting, hypothermia, and a pulse of 58. Cholesteatoma or a sub-dural abscess was diagnosed. On trephining the brain was found congested, and a large quantity of cerebro-spinal fluid escaped under pressure. Next day there was neither pain nor vomiting. Recovery followed.

CASE 8.—Kretschmann (*Münch. Med. Woch.*, 1896, p. 363).—A child, aged 13, had otorrhœa. For 15 days there were headache, fever, vertigo, papillary stasis, and a pulse of 54. Intracranial complications were diagnosed. The mastoid was trephined and a cholesteatoma was found. The dura mater over the cerebellum was exposed, and a large quantity of clear fluid escaped under pressure. The dura mater over the cerebrum was also exposed, and some cerebro-spinal fluid was allowed to escape. There was considerable improvement, but 15 days later the papillary stasis returned. The cerebro-spinal fluid was allowed to drain away in considerable quantity, and in 2 months recovery was complete.

CASE 9.—Beck (*Mittheil. aus den Grenzgebiet. der Med. und Chir.*, vol. i., p. 248).—A child, aged 14, who had had right otorrhœa for 7 years, developed headache, with prostration and hyperæsthesia and hyperalgesia of the whole body. There was double papillary

stasis. On the third day the pulse was 52, and there was somnolence. The mastoid was trephined and no pus was found. The lateral sinus was exposed, but there was no thrombus. The cerebral dura mater was tense. The lateral ventricle was punctured, and about 26 gm. of clear cerebro-spinal fluid escaped. There was immediate improvement, the pulse rose to 80, and consciousness returned. Five days later, the headache, vomiting, and slowness of the pulse returned. There was stiffness of the neck and coma. A second operation was performed. The dura mater did not pulsate; the temporal lobe was punctured and also the frontal and occipital lobes, but without result. On puncturing the lateral ventricle 40 gm. of clear fluid escaped under pressure. There was some improvement, but a few days later the symptoms returned. The ventricle was punctured for a third time. Recovery followed.

All these cases agree in their origin (suppurative otitis media), anatomical nature (high tension of the cerebro-spinal fluid), and symptoms (those of increased intracranial pressure). These are the essential characteristics of serous meningitis from otitis.

ETIOLOGY.—In all but 2 of the cases the otitis media was chronic. The age of the patients varied between 10 and 20, with a marked preference for the quinquennium of 10 to 14. The fact that this serous meningitis is encountered in late childhood differentiates it sharply from acute idiopathic hydrocephalus—which the Germans call “meningitis serosa.”

PATHOLOGICAL ANATOMY.—The essential feature is the increase in the quantity of the cerebro-spinal fluid. Unfortunately it was not examined bacteriologically or microscopically. The meninges did not show any marked lesions. The dura mater

was sometimes congested; in Cassels' case it was adherent to the petrous temporal. The pia mater was almost invariably very vascular and œdematous. In Broca and Laurens' case the dura mater was of normal appearance, and the cerebral cortex looked healthy. The co-existence of œdema under the pia mater and ventricular dropsy was noted in the writers' case, and in that of Byrom Bramwell. In the case of Broca and Laurens there was only ventricular dropsy, as also in Mayo Robson's. In Joel's, Schmiegelow's, Kretschmann's, and Cassels' patients there was only an increase of fluid in the sub-arachnoid spaces. But as in some of the cases the lateral ventricle was not punctured whether there was ventricular dropsy or not cannot be said.

SYMPTOMS.—The onset is always sudden, and marked by headache which rapidly becomes intense. Frequently vomiting appears at an early date, and then convulsions with progressive torpor, which passes into coma. Headache is intense and is paroxysmal. In all the cases in which the eyes were examined (4 in 9) there was papillary stasis. Vomiting occurred in 4 out of 9 cases. Fever which is generally present (6 in 9 cases) is never very high (between 100° and 103°). The pulse is sometimes markedly slow (4 cases), and sometimes rapid and small (5 cases). The respiration is generally slow, and in the writers' case was slow and shallow for some days. All mental states from torpor to coma have been noted. Semi-coma or complete coma are most frequent (6 in 9 cases). Only one case of maniacal delirium was seen. General epileptiform convulsions beginning in the face and spreading without any preference as to side, without an initial cry, and with or without loss of consciousness were noted in 4 cases. Their repetition, combined with deep coma,

should decide the surgeon to intervene. They may disappear immediately after operation, and may appear again during convalescence. In one case the convulsions were confined to the thumb. Paralysis is rare; but paresis occurred in 2 cases. Aphasia was observed in only one case. Lumbar puncture only shows that intra-cranial pressure is increased (the fluid escaping in jets).

PROGNOSIS.—If an operation is performed recovery begins at once, but it may be interrupted for a time by an epileptiform attack, and sometimes, as in Boeck's case, by symptoms so serious that the operation must be twice repeated. In this case there must have been a return of the high intra-cranial pressure. In the only case not operated on death occurred. The prognosis in the absence of operation is therefore grave.

DIAGNOSIS.—The diagnosis has never been made before operation. Cerebral abscess has always been suspected. Suppurative meningitis can be excluded by lumbar puncture, which would yield either pus or a doubtful looking fluid, and by the higher temperature. From the form of sub-acute auricular meningitis of Broca and Maubrac diagnosis is almost impossible for lumbar puncture yields normal cerebro-spinal fluid. The diagnosis from cerebral or cerebellar abscess is impossible, except perhaps when there is a sudden onset with rapidly alarming symptoms. An abscess is often attended with a variable degree of serous meningitis, whence some of the symptoms of increase of intra-cranial tension. Moreover, extra-dural abscesses, and even simple suppurative mastoiditis, without intra-cranial lesions may be attended by cerebral symptoms, which are cured by an operation on the bone without interference with the dura mater. It is therefore extremely difficult to diagnose serous meningitis

PATHOGENESIS.—Serous meningitis acts only mechanically, by increasing the intra-cranial pressure. It may be only a localised infection of the meninges, attenuated or at its early stage. It does not cease immediately after puncture, and serious symptoms may recur in a few days. This should be remembered in interpreting the symptoms which sometimes appear after a cerebral abscess has been evacuated.

TREATMENT.—In some cases opening the dura mater puts an end to the symptoms. In others puncture of the lateral ventricle is necessary. Probably the latter is the surest method.

GAZETTE DES HOPITAUX, June 7, p. 629.

Congenital Laryngeal Stridor.

By PROSPER MERKLEN A. ALBERT
DEVAUX.

Congenital laryngeal stridor is a rare condition. As it is seldom fatal little is known of its morbid anatomy. In the few necropsies made slight laryngeal malformations have been discovered. The epiglottis and the aryteno-epiglottic folds are the parts most affected; the former does not show its normal curves, being folded in, so that the margins tend to approximate. The aryteno-epiglottic folds are unduly lax: their free borders are thin and flaccid so that they have a tendency to come together, encroaching upon the laryngeal lumen and being thrown into vibration by the air as it passes into the glottis. The condition appears to be due to congenital malformation of the supra-glottic structures mentioned, for as the larynx develops the stridor disappears, and the folds in the epiglottis and neighbouring parts vanish.

SYMPTOMS.—Stridor may appear at birth or after some days. It is characterised by a crowing sound, but it may sometimes resemble the purring of a cat or the croaking of a frog. The stridor is inspiratory; the pitch is low at first, but rises towards the end of the inspiration. Expiration usually is silent but in some exceptionally marked cases there may be some abnormal sound towards the end. The stridor is continuous though it varies in intensity. During sleep or absolute rest it becomes less marked and may even cease for one or two minutes. If the child be excited, as during crying or coughing, it becomes much more marked. Compression of the nostrils, yawning, and even administration of chloroform do not arrest it. The voice is unaffected and there is no alteration in cough. Notwithstanding the contraction of the laryngeal lumen respiration does not seem to be much interfered with and the child seems to suffer but little inconvenience. The stridor becomes more marked during the night. Respiration may then be a little hampered and the patient show slight cyanosis and even retraction at the root of the neck. In severe cases the stridor increases during the first 2 or 3 months, then it remains unaltered till about the eighth month, when it declines, finally it disappears in the second year. Comby records a case in which it was prolonged into the third year. The musical character of the stridor becomes less and less marked, and remissions frequently occur. The stridor may even disappear for a time and return for a short period. Complications are uncommon. Bronchial infection and malnutrition are perhaps the most frequent.

DIAGNOSIS.—A child showing inspiratory stridor immediately after birth probably has this condition, and should there be no eleva-

tion of temperature and good general health the diagnosis is confirmed. Laryngismus stridulus occurs in children somewhat older and is characterised by attacks appearing suddenly one night and returning the next. Infantile laryngitis is prone to shew spasmodic symptoms owing to the small calibre of the glottis, but inflammatory conditions of the larynx, whether simple or specific, are accompanied by unmistakable general symptoms. Reflex spasm of the larynx of pulmonary origin has been described by Variot (*Jour. de Clin. et de Therap. Infant.*, 1897). Auscultation show that this laryngeal disease is secondary to inflammatory conditions in the lung. It sometimes occurs in measles. More difficult perhaps to differentiate is essential spasm of infants, sometimes called phreno-glottic spasm or thymic asthma. This condition generally begins after the third month, often in rachitic children who are subject to general convulsions. There is a violent crisis beginning with whistling inspiration, arrest of respiration, cyanosis, cold sweats, and contracture of the limbs. Such cases sometimes terminate fatally. Congenital stenosis of the larynx is rare. In it there are also asphyxial attacks with cyanosis but between such attacks respiration is altered and both inspiration and expiration are equally affected. The voice is always affected, which is one of the most important diagnostic points. Œdema of the glottis sometimes occurs in infants. Retropharyngeal abscess may cause attacks of dyspnoea. Examination with the finger re-

veals a painful and fluctuating swelling. Pyrexia and the general condition of the patient help in the diagnosis. The upper respiratory passages are sometimes interfered with by mediastinal glands and many of the symptoms resemble those of congenital laryngeal stridor. In such cases attention must be paid to the cough, which may be dry or hacking, sometimes hoarse or brassy. The stridor instead of being of a musical character is on the contrary rough and rasping and—a most important point—it involves expiration as well as inspiration. Moreover physical examination of the chest may reveal diminished resonance. The existence of adenoids must always be borne in mind, especially as the peribronchial lymphoid tissue is possibly also increased and may be a source of reflex irritation of the recurrent laryngeal nerves. If the thymus is enlarged soft tumefaction may be detected in the episternal notch. The stridor is most marked when the child lies on the back with the head extended.

Prognosis is good. The condition disappears as the larynx develops. In a few cases non-expansion of the lungs seems to have resulted.

Treatment is purely symptomatic. Bromide and strychnine have been suggested but there is little reason for interfering. General hygienic conditions—tepid baths, equable temperature, and other means of protecting the patient from pulmonary complications—are the most important. Comby suggests nasal instillation of mentholised oil, 1 in 50.

MEDICINE.

Co-existence of Diabetes Insipidus and Mellitus.—P. Kuhn (*Münch. Med. Woch.*, Jan. 21, p. 103).—Cases of diabetes occur not infrequently in which polyuria remains long after sugar has disappeared from the urine, but only 3 are known in which glycosuria appeared years after the onset of polyuria. In a case reported by Frerichs diabetes insipidus appeared after an attack of meningitis, and was eventually converted into diabetes mellitus. More recently Senator published the case of a woman, aged 47, who had had abnormal thirst and polyuria from her youth. Over 22 pints of urine were passed daily. At 50 glycosuria appeared for the first time. The urine was still pale, and of low s.g. The previously well-nourished woman then became emaciated and soon died of asthenia. The writer adds a fourth case:—

A woman, aged 58, entered hospital in 1899 for post-pneumonic right empyema. The urine was normal. In July, 1900, she returned with a scirrhus of the breast, which was removed. Soon afterwards polydipsia and polyuria suddenly appeared. The daily amount of urine was 8 to 12 pints, the s.g. 1002 to 1004. Neither sugar nor albumin was present. She died on May 28. Eight days previously sugar appeared in the urine for the first time and persisted in proportions varying from 1.5 to 1.8 per cent. At the necropsy numerous metastatic carcinomatous nodules were found in the sternum, pleuræ, bronchial glands, and lymphatic glands, near the solar plexus, in the suprarenal capsules, and in the liver. The pancreas was considerably atrophied.

Possibly the pressure on the solar plexus produced polyuria. The late glycosuria might be connected with the pancreatic, or even the suprarenal changes (see also "Suprarenal

Diabetes," "REVIEW," p. 300). The centres in the floor of the fourth ventricle, puncture of which produces polyuria and glycosuria respectively, are distinct, the one for polyuria being situated just anteriorly to that for glycosuria. It was thought possible that a metastatic growth had involved first one centre then the other, but, post mortem, none was found.

See also "REVIEW," Vol. III., p. 36.

The Pneumococcus in the Blood in Pneumonia.—Rufus I. Cole, M.D. (*Johns Hopkins Hospital Bulletin*, June, p. 137).—During the session 1900-1901 cultures were made from the blood in 30 cases of pneumonia in the service of Dr. Osler. In all but one case there was acute lobar pneumonia. This exceptional case was one of pneumococcic septicæmia, arthritis and meningitis, in which at the necropsy the only pulmonary lesion was recent broncho-pneumonia, which was only secondary and terminal. In another case there was only diffuse broncho-pneumonia, but in one lung there appeared to be a resolved lobar pneumonia. The cases were not selected but the death rate of 43 per cent. shows that they were of more than average severity.

The method was that described in the writer's report on blood cultures in typhoid fever ("REVIEW," Vol. IV., p. 543). Eight or 10 c.c. of blood were obtained in each case. As a culture medium in the first cases bouillon was used, 5 or 6 tubes being employed in each case. Later, in order to dilute the blood further and overcome its bactericidal effect, Erlenmeyer flasks, each containing 150 c.c. of bouillon,

were used, several of these flasks being employed for each culture. There was some difficulty in determining whether a growth had occurred in this medium. On account of the suitability of milk as a culture medium for the pneumococcus and the readiness with which the presence and growth of this organism may be recognised by the early acidification and coagulation of the medium, Erlenmeyer flasks, each containing 150 c.c. of sterile litmus milk, were used in the later cases. On smears made from this medium capsules may be easily demonstrated, and a preliminary conclusion readily reached as to the identity of the infecting organism. In all cases the identity was finally established by the characteristic shape and staining reactions, including the staining of capsules, by the typical growth in milk and agar, and by the absence of growth, or very slight growth, in gelatin at the ordinary room temperature.

Pneumococci grew from the blood of 9 cases, all of which were fatal. In 2 pneumococci were found circulating in the blood 3 days before death. In the other positive cases the cultures were made a shorter time than this before death, in 2 only 7 hours. In one case the cultures were negative 6 days before death, but pneumococci were found 3 days later. Thirteen of the cases were fatal, so that pneumococci were not obtained from the blood of 4 of the fatal cases. Notwithstanding in one case cultures were made 3, 4, 6 and 2 days before death. In one case organisms were not found in the blood though thrombosis of the right internal saphenous vein occurred. But as cultures from this thrombus proved negative, the case was probably one of so-called marantic thrombosis, especially as the thrombosis occurred in an old varicose vein.

Cultures from the blood have not been of much aid in the diagnosis of pneumonia. But in obscure cases of central pneumonia, or in cases of general infection unassociated with pulmonary lesions, they may be of great value. Their greatest value clinically is with reference to prognosis.

"Typho-malarial Fever." — S. A. Gavala (*Wien. Klin. Woch.*, May 22, p. 554).—In the Græco-Turkish War of 1897 50 cases of combined typhoid fever and malaria were observed between July and Sept. in Epirus, especially in the town of Arta, which has no sewers or water-supply. Some authorities consider typho-malarial fever a disease *sui generis*. The writer has recently treated 2 cases in Athens with symptoms identical with those he observed in Epirus. In both there were Widal's reaction, poikilocytosis, leukopenia, and deficiency of red blood corpuscles and of hæmoglobin, and the typhoid bacillus was found in the spleen (in one case by puncture during life) and in the blood. In the first case large globular intracorpuseular plasmodia were present, in the second crescents. The form of parasite remained unaltered through out the illness. These facts prove that "typho-malarial fever" is a combination of typhoid fever and malaria.

The symptoms and morbid anatomy vary according to the infection which predominates. The onset is frequently marked by attacks of intermittent fever, which later gives place to a quotidian or remittent type. The regularity of the continued fever of typical typhoid is absent, and short apyrexial periods are common. In some cases the temperature never rises above 100.4° . The most striking cases are those in which after a short initial rise the temperature becomes normal and remains so throughout the illness. The prognosis then is usually bad, and there may be constant delirium. A slight rigor usually precedes the evening rise of temperature (if present), and the remissions are accompanied by slight perspiration. The combined infection usually lasts 2 months or more, and the disease is then continued as simple tertian fever. Epistaxis and gingival hæmorrhages are common. The liver is always enlarged and tender, and there is often jaundice. The spleen is invariably enlarged, soft, and friable. The urine contains much albumin. Coma, intestinal hæmorrhages, and cardiac failure

account for most of the deaths. In 3 cases there was peritonitis. A roseolous eruption was never observed. The intestinal changes varied from intense diffuse catarrh or follicular enteritis to typical typhoid ulcers. Post mortem nearly every organ was infiltrated with pigment (malaria). The severity of the disease tends to show that the typhoid bacillus is rendered unusually virulent by the presence of the malarial parasite.

Pulmonary Osteo-arthritis with Regression.—Dr. A. Schittenhelm (*Berlin. Klin. Woch.*, March 24, p. 254).—A workman, aged 20, was admitted to hospital in May, 1901. His family history was good, and he had always been healthy until Dec., 1888, when he fell into a ditch and got wet. This was followed by pyrexia, palpitation, and pain in the knees and ankles. When he got up a few days later the legs felt heavy and clumsy, and after a week he returned to bed owing to increasing weakness and stiffness of the limbs. He remained there 6 months, and did not return to work for a year. A few months after the beginning of the illness the finger-tips and the joints of the hands, knees, feet, and toes began to enlarge. Up to the autumn of 1900 he worked as a farm labourer. Then the condition had rapidly advanced. Oedema of the feet and ankles came on after walking but subsided in bed. For several months there had been a stabbing pain in the left side on walking, swallowing, or deep inspiration. The pulse was 100 and regular, the respirations were 20, and the temperature was 99.1°. The pupils were equal and reacted normally. The discs and retinae were normal, and there was no contraction of the visual field or colour-blindness. The thyroid gland was normal, and there was no dulness over the upper part of the sternum. There were some small enlarged glands in the fourth and fifth inter-costal spaces. Over the left lung posteriorly and in the axilla,

below the level of the eighth spinous process, there were dulness, bronchial breathing, and increased vocal resonance. An exploratory puncture was negative. The cardiac apex was in the fourth inter-space to the inner side of the nipple line, and a systolic murmur was present at the apex and the base. The second pulmonary sound was accentuated. The urine contained neither sugar nor albumin.

The pinnæ were large and divergent, and the nose was prominent, but the jaws were normal. There was no spinal curvature, but extension and flexion were somewhat limited. The shoulder and elbow joints were normal, though both olecrana were abnormally wide. The peripheral ends of the radius and ulna were slightly thickened. The wrists however, were greatly enlarged and the outlines of the condyles were invisible. The fingers were thick and clumsy. The metacarpo-phalangeal and inter-phalangeal joints were enlarged and abnormally loose. The most marked changes were in the terminal phalanges which resembled drum-sticks and were excessively curved. The nails were wide and claw-like. The grasp on either side was feeble. The skin was shiny and tense over the swollen parts, but was nowhere hypertrophied. The muscles of the upper arm, thigh, and shoulder were ill-developed. The knees and ankles were considerably swollen, and the malleoli were thickened. The feet were broad but otherwise unaltered. The terminal phalanges of the toes were swollen and the nails, as in the fingers, were claw-like.

During June the swelling, especially in the knee and finger joints, slowly decreased. The dulness over the left lung persisted and the temperature was always slightly raised. The sputum contained capsulated diplococci, which were pathogenic to mice, but no tubercle bacilli. The urine contained albumin. One of the enlarged intercostal glands was excised; it was uniformly hypertrophied and contained a

small-celled cortical exudation. In July there was a further decrease in the size of the bones and joints, which, however, scarcely affected the terminal phalanges of the hands and feet. The dulness over the left lung became less marked, and feeble vesicular replaced bronchial breathing. At the end of July the wrist had attained an almost normal size and shape, the phalangeal joints were smaller, and the synovitis of the knee had disappeared, and the ankles were less swollen. The terminal phalanges were unaltered.

This case, but for the absence of deformity of the superior maxilla and of scoliosis in the upper dorsal region, agrees in every detail with Marie's description of pulmonary osteo-arthritis. The claw-like deformity of the hands with drum stick fingers, changes in the knees, ankles, wrists, and inter-phalangeal joints, the thickening of the distal articular ends of the forearms and legs, and the absence of a prognathous inferior maxilla and of scoliosis in the lower part of the spinal column distinguish it from acromegaly. A radiograph showed that, as usual, the enlargement affected the soft parts more than the bones. The former compared with those of a normal hand were 64 per cent. in excess. The epiphyseal lines were abnormally distinct, which was probably owing to a partial arrest of growth rather than to any specific action of the disease. The bony changes consisted in periosteal thickenings of the phalanges, metacarpal, and metatarsal bones, and to a less extent of the distal ends of the ulna, tibia, and fibula. These thickenings were specially marked on the terminal phalanges, and appeared in a radiograph as light streaks on the dark ground.

Regressive changes in the hypertrophied parts appear not to have been observed hitherto. Measurements on a series of radiographs showed that these affected the soft parts almost entirely, and that the diminution of the periosteal thickenings was almost negligible. The fact that calcium and phosphoric acid were excreted in the urine in normal proportions was a further

proof of the slight involvement of the osseous structures in the evolution and subsequent partial involution of the morbid process. The presence of chronic pneumonia appears to support Marie's view as to the relation between the specific changes and pulmonary affections. It seems, however, that the pneumonia, as in one other reported case, appeared long after the onset of the disease. The toxic origin of the disease is indicated by the simultaneous presence of pneumonia, endocarditis, and albuminuria.

Segmental Œdema. — Debove (*Presse Médicale*, May 28, p. 510).

CASE 1.—A woman, aged 22, had a feeling of weakness in the legs. The right calf, thigh, and leg became swollen. Five months afterwards the left leg swelled, but its volume always remained less than that of the right. The swelling was markedly segmental: each segment was affected separately, and there was none of the swelling *en masse* which accompanies disease of the heart, blood-vessels, or kidneys. The œdema did not extend to the genital organs nor the buttock: it began sharply at the gluteal fold. Below, it stopped at the popliteal space. The œdema of the leg was sharply diffused by the popliteal space, and the ankle joint. The œdema of the foot was limited to its dorsal aspect. The sole and the toes were unaffected. The skin was smooth, thin, and transparent, like all skin distended by œdema. When pricked a few drops of serous fluid escaped. There was no apparent sign of obstruction to the venous or lymphatic circulation, and there was no glandular enlargement. Movement was unimpaired, and the patient could walk with ease, for over the joints there was only very slight swelling.

CASE 2.—A woman, aged 25, of healthy parentage, had 7 brothers and one sister all of whom were healthy except a brother who was tuberculous. She had segmental œdema, from which all her brothers and sister were free. A short time before she found that she could not button

her left boot, and so became aware that her leg was swollen. The swelling increased progressively, and after 4 months she went to bed in the hope that rest would improve the condition, but it did not.

There was a considerable enlargement of the left leg. In the following table the measurements are given in cm.

	Right Limb.	Left Limb.	
		1899	1902.
Circumference at level			
of malleoli	27	40	33
Circumference round			
calf	39	52	46
Circumference round			
knee	39	50	48
Circumference just			
below patella ...	50	60	60
Circumference of			
thigh	54	66	66

Apparently in the last few years the disease has been almost stationary. The increase in size of the limb was not uniform. The toes were not affected, the dorsum of the foot was swollen, but it was separated from the leg by a furrow running from one malleolus to the other, and by several well-marked folds of skin. The leg preserved its general configuration, and the contour of the knee was unchanged. In front the swelling stopped sharply at the fold of the groin, but behind the buttock was obviously larger than that on the sound side, and the œdema extended as high as the iliac crest. The skin of the affected limb was of a natural colour and did not pit on pressure. Firm and long-continued pressure at the lower part of the leg produced only the slightest impression, which disappeared immediately. The skin could be moved upon the deeper parts. Movement was unimpaired and the patient did the work of a domestic servant without fatigue.

This condition is termed by Meige trophic œdema, by Debove segmental œdema. It

differs from elephantiasis (filarial, leprous, or lymphatic) by the absence of thickening of the skin. Its segmental character distinguishes it from cardiac or renal œdema. It is not a local variety of myxœdema, for nothing in any other part of the body suggests that disease, and thyroid treatment is ineffectual. The writer thinks the œdema is of neuropathic origin and depends on some lesion of the medulla.

The disease affects the female sex chiefly, and usually begins after puberty. It may develop gradually or rapidly, and may affect one or both limbs. The limbs may not be affected simultaneously. In one of the writer's cases the œdema commenced in the right leg, and the left leg was not affected till 5 months afterwards. The condition is often hereditary. Segmental œdema never shortens the patient's life, but it is incurable.

Diphtheria in the New-born.—George A. Auden, M.A., M.D. (*Lancet*, April 19, p. 1104).—Diphtheria of the new-born appears to be rare. A child, aged 8 days, had a greenish, slightly blood-stained discharge from the left nostril. He became fretful and began to take the breast indifferently. Next morning there was an acrid sanious discharge from both nostrils, which soon became excoriated. The child was very fretful and refused food. An attempt to examine the fauces was unsatisfactory and revealed nothing. On the tenth day of life there was much nasal discharge, the nostrils being almost occluded. The child breathed with difficulty and with a little inspiratory stertor. There was no recession of the chest but there were some cyanosis and great difficulty in administration of food. There was moderate diarrhœa, the pulse was imperceptible, and the temperature was 101°. Both fauces were œdematous and upon each tonsil was a typical patch of membrane. 200 units of antitoxin were injected at once, again in 4 hours, and again in the evening

when the child had much improved. The temperature remained at 101° . On the eleventh day there was less difficulty in breathing but the discharge from the nostrils continued. The temperature varied between 100° and 101° . The child took the breast every two hours. A swab showed diphtheria bacilli. On the twelfth day a slight nasal discharge continued; there was still some exudation on the right tonsil. The bowels were still loose and the stools greenish. The temperature was 100° . The child took the breast and slept well. On the thirteenth day the temperature was 98.6° , there was no sign of exudation on the tonsils, and the pulse was good. The mother stated that one month before the child was born she had suffered from severe sore-throat which had caused dysphagia until a week before the confinement.

Appendicitis in Infectious Diseases.—M. Simonin (*Presse Méd.*, Jan. 1, p. 8).—The writer has seen 8 cases which presented the clinical symptoms of more or less acute inflammation of the vermiform appendix in the course of such diseases as infectious sore throat, scarlatina, erysipelas, and complicated mumps. He regards the vermiform appendix as a kind of tubular gland which assists in the defence of the organism during general infections, and receives germs by both the blood and lymph channels. In this way all degrees of appendicitis may be produced from the latent catarrhal form with only one symptom, viz., pain at McBurney's point, to the severest forms, with perforation. The streptococcus is the most frequent cause, as it is the organism usually found in infectious sore throat, scarlatina, erysipelas, influenza, measles, and small-pox. Some anatomists regard the stenosis and obstruction of the

appendix often found in old people as the result of multiple inflammations, latent or sub-acute, which have occurred during the infectious diseases of early life.

Leucocytosis in the Diagnosis of Appendicular Exudations.—Prof. Curschmann (*Wien. Klin. Woch.*, Dec. 26, 1901, p. 1311) has examined the blood in 60 cases of appendicitis. Normally there are 8,000 to 10,000 leucocytes in the c.mm. If the exudation in appendicitis is serous and capable of absorption this number is but little, if at all, exceeded; if there is a tendency to suppuration, or an abscess has already formed the number rises from the beginning of the illness and may reach 20,000 or 25,000 in the c.mm. The leucocytosis usually increases from day to day as long as the abscess enlarges; with the evacuation of the abscess, whether by operation or irruption into the intestine, it rapidly subsides. Failure to subside indicates defective drainage. Leucocytosis is a certain indication of the presence of pus, and is a more reliable guide than palpation, pyrexia, or the condition of the pulse.

See also "REVIEW," p. 72.

Cylindrical Visual Field a Sign of Hysteria.—Prof. R. Greef (*Berlin. Klin. Woch.*, May 26, p. 496).—A cylindrical ("röhrenförmig") visual field is one in which the field is contracted, and remains of the same size, although the perimeter is increased; that is, it is of exactly the same size at a distance of 5 metres as at $\frac{1}{2}$ metre. This is a physical impossibility, and is practically conclusive of hysteria.

THERAPEUTICS.

The Treatment of Whooping-Cough by Compressed Air.—Chas. Rocaz and J. Delmas (*Archives de Médecine des Enfants*, May, p. 281).—The writers consider this method of treating whooping-cough of considerable value. It is by no means new, and has been suggested by various writers. The patients are placed in a metallic air-tight cylinder lighted by bulls-eyes. Two tubes pass in, one of which communicates with an air pump driven by a gas motor, the other opening externally. Both tubes are furnished with 2 taps working simultaneously, thus allowing the pressure of the air to be altered at will. A sensitive manometer is attached to the cylinder. The air driven into the cylinder is sterilised by passing through sheets of cotton wool. The pressure to which the patients are exposed varies from 10 to 40 cm. of mercury. The maximum was never exceeded on the first occasion, but in subsequent trials an average pressure of 30 cm. was maintained. Compression must be slow, 1 minute per every additional cm. of mercury, the whole period lasting from half to 1 hour. The most critical time is when the pressure is diminished, and this must occupy a period quite double that given to the compression. This precaution obviates accidents. The temperature of the cylinder was kept constant, by exposing the compressor to a current of cold air. Thus there was no discomfort. After use the cylinder was carefully disinfected.

The writers treated over 50 cases of whooping-cough. Long standing cases were excluded. The cases were divided into two groups—those of from 15 to 20 days' duration in all of which recovery was rapid, and those of shorter duration with marked spasmodic cough. It is particularly on this latter group that the paper is based. From the very beginning of the treatment the seizures were diminished in duration, intensity, and

frequency. Rarely did a seizure take place in the chamber, especially when the air was under pressure. Only towards the end when the pressure was reduced might an attack of coughing occur. In several instances attacks of over 10 to 20 spasms with marked whoop were in a few days reduced to 2 or 3 with proportionate decrease in congestion, spasm, and prostration. The total duration of whooping-cough was decidedly curtailed. The bronchial catarrh, which almost always accompanies whooping-cough, was always benefited—a fact which is not surprising, as other forms of bronchial catarrh are often considerably benefited by this method. The general symptoms also showed great improvement: appetite improved, and pyrexia when not due to some secondary infection was reduced. Pulmonary emphysema, hæmorrhages, and other complications depending on spasmodic cough were remarkably benefited, and vomiting occurred only occasionally. Secondary broncho-pneumonia did not appear in any case, notwithstanding that most of the cases occurred in winter.

It is not easy to say how compressed air acts. Possibly it has an antispasmodic influence. According to Paul Bert a patient exposed to compressed air absorbs a large amount of oxygen into the blood. Possibly this super-oxygenation has an important action in whooping-cough. Recent investigations into the treatment by inhalations of oxygen appear to bear out the suggestion.

No accidents occurred. The children were often accompanied by their mothers, who sometimes complained of pain in the ears due to the alteration of pressure. Dilatation of the right heart which so frequently occurs in severe cases of whooping-cough does not seem to be a contraindication. In fact, this dilatation is the result of an embarrassed circulation due to the long duration, intensity, and frequency of the

spasmodic attacks, all of which are greatly benefited by compressed air. This method of treatment seems to be the best prophylactic against cardiac dilatation. The writers, however, suggest the administration of caffeine at the beginning of the treatment as a cardiac tonic—a method which was very successful in one severe case in which cardiac action was extremely enfeebled. Children under a year can be quite easily treated in this manner, and some of the best results were obtained in a child, aged 6½ months. In another case one, aged 4 months, was cured in 16 days by a few exposures to compressed air. The treatment should be continued till the spasmodic attacks disappear, and even for some days after, as the spasms occasionally return on suspending the treatment. When there is swelling of the tracheo-bronchial glands the effects are not so rapid.

Anæsthesin (*Therapeutische Monatshefte*, June, p. 304).—Anæsthesin (para-amidobenzoic acid ethyl ester) is a white powder without taste or smell. It is slightly soluble in cold water, more soluble in warm water, and readily soluble in alcohol, ether, chloroform, acetone, fats and oils. It acts like orthoform, to which it is allied, producing local anæsthesia, but it is non-irritating and much less poisonous. V. Noorden has tested its therapeutic properties. He gave it internally in hyperæsthesia of the stomach and gastric ulcer, and also in irritable cough, and cases of difficult deglutition. He also used it as a dusting powder or for inhalation in hyperæsthesia of the laryngeal mucous membrane. It may be used as an ointment in the various forms of pruritus, especially in pruritus vulvæ, in cases of diabetes mellitus, or in jaundice and nephritis, or for allaying the intense itching in chronic perineal and scrotal eczema.

In suppositories it gives great relief to painful hæmorrhoids, while it acts almost as well as opium in relieving tenesmus set up by inflammatory irritation of the mucous membrane. The

dosage is as follows: ointments with lanolin, 10%; suppositories, 0.2 to 0.5 parts to 2 of ol. theobrom. For inhalation V. Noorden employs either a 10% tragacanth emulsion diluted with water or a 3% solution in 45 parts of absolute alcohol and 55 of water. It may be administered internally in doses of 0.3 gm. to 0.5 gm. twice or thrice daily 10 or 15 minutes before food. Not more than 2.5 gm. should be given in one day.

"Atoxyl"; a New Organic Arsenical Preparation.—W. Schild (*Berlin. Klin. Woch.*, March 31, p. 279).—Atoxyl is meta-arsenious acid-anilide, its formula being $C_6H_5NHAsO_3$. It is a white, odourless powder, soluble to the extent of 20 per cent. in warm water, of which 2 per cent. is again precipitated on cooling. Watery solutions gradually become yellow, but do not decompose even when boiled. Atoxyl contains 37.69 per cent. of arsenic, or about half as much as arsenious acid (As_2O_3). It is 20 times less toxic in animals than arsenious acid, and capable of being given to man in about 10 times the quantity. Compared with cacodylate of sodium ("REVIEW," Vol. IV., p. 742) it contains less arsenic (37.69 per cent. instead of 54.3 per cent.), but has the great advantage of not producing an odour of garlic in the breath. It is unsuitable for internal administration as it sooner or later disturbs digestion, but it is the best known salt for hypodermic administration. Though arsenic is much more active when given subcutaneously than by the mouth the pain and irritation caused by injections have prevented their general adoption.

Seventy-five cases were treated and about 1500 injections given without the production of any marked irritation. A 20 per cent. solution, warmed immediately before use, was employed. The first injection should contain 0.04 gm. (nearly ½ gr.), the second 0.08 gm., and so on until the fifth injection contains 0.2 gm. (over 3 gr.), which should be exceeded

only in exceptional cases. The first 5 injections were given at intervals of 4 days, the rest every third day. If there were any unpleasant effects, such as shivering, especially towards evening, vertigo, headache, or dryness in the throat, the injections were discontinued for 2 or 3 days. The syringe should be washed out with carbolic lotion, and after sterilisation of the skin with the same lotion the needle should be introduced vertically into the gluteal muscles. The action of atoxyl is to some extent cumulative. Though the duration of treatment in chronic skin diseases was not markedly shortened the possibility of employing doses 10 times as large as in the case of arsenious acid enabled the same effect to be attained with injections given at long intervals, *e.g.*, after the sixth injection, only twice a week. The drug was successfully employed in, alopecia areata, dermatitis herpetiformis, multiple cutaneous sarcomata, psoriasis, lichen ruber, and Graves' disease. External applications were often used simultaneously. Of 14 cases of lichen ruber treated exclusively with injections 9 were completely cured with from 17 to 42 injections, the remainder were still under treatment at the time of writing. Atoxyl is less toxic than arsenious acid, probably because the arsenic is so firmly bound to the anilide molecule, that in the body it is slowly released and acts gradually and uniformly.

Treatment of Colitis by Right Lumbar Colotomy.—Dr. W. Hale White and Mr. C. H. Golding-Bird (*Lancet*, May 31, p. 1537) describe the subsequent history of 3 cases of colitis in which right lumbar colotomy was performed several years ago and in which the artificial anus was subsequently closed. (See "REVIEW," Vol. II., p. 343). Two of these (one membranous colitis and one chronic dysentery) were perfectly cured, remaining so after the artificial anus was

closed. In the third (one of membranous colitis) complete relief was given, the patient remaining well for 18 months after the closure of the wound; she then relapsed and was not now materially benefited. The operation is in some cases curative, acting by giving rest to the colon. The artificial anus should be left open for a considerable time—in these cases 1 year, 1½ years, and 2½ years were the periods. The writers think that in a severe case 10 years would not be too long. Right lumbar colotomy is to be preferred to cæcotomy. Irrigation is harmful.

See also "REVIEW," p. 86.

The Action of Suprarenal Extract on the Nasal and Laryngeal Mucous Membranes.—L. Harmer (*Wien. Klin. Woch.*, May 9, 1901, p. 458) has employed suprarenal extract in 32 cases. He began with 10 per cent. watery solutions, but soon abandoned them in favour of 50 per cent. solutions. In powder form the extract is useless. In 22 cases the extract was applied locally for swelling and hypertrophy of the inferior turbinate bones. If the swelling was due solely to congestion the reddened mucosa invariably became pallid, and the whole turbinate appeared to decrease in size within 2 minutes of the application; this altered condition persisted for several hours. If, however, the swelling depended on true hypertrophy, no result usually was obtained. In a few cases the turbinates became slightly smaller and less reddened, but only after prolonged application. In acute and sub-acute laryngitis suprarenal extract appeared to be inert. Although the extract itself possesses very slight anæsthetic action it markedly reinforces the action of cocaine, so that complete anæsthesia can be obtained by smaller doses than would otherwise be possible. This property is valuable when the patient bears cocaine badly.

SURGERY.

Effusion as an Early Sign of Peritonitis.—William Henry Battle, F.R.C.S. (*Lancet*, June 14, p. 1679).—Recognition of the earliest indications of peritonitis due to disease of the appendix is very important: it may make all the difference between life and death. In many cases the peritonitis is insidious, and the subjects are brought to the hospital in the last stage. There is a history of a mild attack of appendicitis and then a sudden change for the worse, or of the rapid development of some unfavourable symptom, generally 4 or 5 days after the commencement of the illness. The abdomen is usually distended and does not move during respiration. The abdominal wall is hard, tenderness is general, and percussion gives a tympanitic note in front with dulness in the flanks; sometimes there is dulness also over the pubes—the dulness of fluid which shifts with the position of the patient. Thrill is rarely found. If the abdomen is opened a large quantity of offensive purulent fluid is let out and probably a perforated or diseased appendix is found; but whatever measures are taken life is seldom saved. It is not sufficiently appreciated that the detection of peritoneal effusion is of great importance in the early diagnosis of peritonitis. The following cases are examples of its value:—

CASE 1.—A girl, aged 14, was admitted to St. Thomas's hospital on Dec. 21, 1900. In May she had been operated on at another hospital for peritonitis, and after recovery was sent to a convalescent home. She was there taken with pain in the abdomen and an abscess developed which was opened. She became ill again on Dec. 19 with pain in the abdomen and vomiting.

The abdomen was not rigid or distended and moved well on respiration. She complained of pain under the right rectus and also half way between the umbilicus and anterior superior spine.

There was evidence of free fluid in the right flank, but no tumour could be felt. She had vomited in the morning, but now the tongue was clean and moist and there was no nausea. The temperature was 100.2° and the pulse was slightly quickened. The scar of the first operation was in the middle line below the umbilicus, that of the second operation was in the right linea semilunaris, over the region of the appendix. Her expression was good and she did not look ill. An incision was made over the right rectus and after displacement of that muscle the peritoneum was opened. Thin pus of a faecal odour escaped and more was removed with sponges. The appendix was found with some difficulty and removed; it was bound down by old adhesions. It contained a faecal concretion of the size of a small hazel nut over which was a perforation. There was a patch of lymph over one part of the ileum. The vessels of the intestine were usually distinct but otherwise there was no change in the appearance of the peritoneum. Recovery followed.

CASE 2.—A youth, aged 15, was admitted to hospital on Aug. 2. In about 4 years he had had 7 or 8 attacks of pain in the abdomen but had never been kept at home by them for more than 2 days. The last one was in March on the day before admission. When returning from work he again felt pain in the abdomen and was unable to eat his supper. He could not sleep and a hot fomentation was applied. In the morning he was a little better and returned to work, but he was taken much worse and was sent to the hospital in a cab.

His cheeks were flushed and he complained of pain in the abdomen, which moved only slightly on respiration. There was general tenderness which was most marked below the umbilicus. The liver dulness was normal. There was dulness in the flanks and above the

pubes, shifting with the position. The pulse was 112 and of fair tension. The tongue was lightly furred. The temperature was 100·8°. The bowels acted the day before admission. When the writer saw him he was suffering but little. His expression was good. The pulse was less frequent—about 90. With the exception of increase in the dulness of the flanks there was little change.

About 18½ hours after the onset of pain the appendix was removed after incision of the rectus sheath with displacement of muscle. On opening the peritoneal cavity free purulent fluid was found which filled the pelvis and extended into both flanks. It resembled thin gruel and was of a dirty yellowish colour and not offensive. The intestines were not distended and showed the normal polish. The only thing abnormal was dilatation of the vessels in the walls of the gut. The appendix was removed. The last inch was intensely inflamed and contained a few drops of pus. At one spot near the tip the wall was extremely thin, evidently being on the point of perforation. The peritoneum was sutured over the stump of the appendix, after which the peritoneal cavity was washed out with saline fluid at a temperature of 105°. A glass drainage-tube was passed into the pelvis. Recovery followed.

CASE 3.—A boy, aged 9, was admitted to hospital on Oct. 10. Some months before he had vomiting and had pain in the upper abdomen which passed away in a few hours. On the afternoon of the previous day when in school he was attacked with pain in the upper abdomen. He went home and vomited once. He complained of a smarting feeling and pain lower down on the right side of the abdomen. Next morning he vomited again and was brought to the hospital in the evening.

The temperature was 101·6° and the pulse from 70 to 80, but he did not appear ill. There was slight distension of the abdomen, but the walls moved well with respiration. Examination with the hand was well tolerated, and the

patient did not complain of pain excepting on pressure to the right of the umbilicus, and then he did not complain much. The right rectus in this region was rather rigid. No tumour could be felt but on percussion there was evidence of free fluid in the pelvis and the right flank. The symptoms were obscure but it was thought best to explore the affected region, the free fluid being regarded as an unfavourable sign.

An incision was made through the right rectus muscle and the peritoneum was opened. A quantity of yellowish-white fluid, which was not offensive, escaped and from 6 to 7 ounces were sponged away from the pelvis and outer side of the ascending colon and cæcum. The appendix was lying to the outer side of the cæcum, slightly bound down and curled on itself. It was 6 inches long and contained a concretion over which was a perforated ulcer. It was removed and the peritoneum was cleansed with warm saline solution. A Keith's tube was inserted and a gauze plug placed beside the tube. The peritoneum, the rectus, and the aponeurosis were stitched with silk, while fish-gut was employed for the superficial sutures. No lymph could be seen anywhere; the intestine was not sticky and the only visible change was unusual distinctness of vessels. Recovery followed.

CASE 4.—A nurse awoke at 1 a.m. on the night of April 30, 1902, complaining of pain in the abdomen and she was sick. There was no rise of temperature and a dose of castor-oil was given for the relief of the supposed colic. She had been perfectly well the day before and engaged in the wards. As the day progressed she had continued paroxysms of pain, especially in the right iliac fossa, and about midday the temperature rose to 102°. It fell towards evening but the pain continued although the bowels acted well. She was lying on her back and had a pulse of 120, which, however, quieted down. There was no facies abdominalis. The tongue was moist and not particularly furred. The abdomen moved little with respiration. There

was a long red firm scar running across from the right kidney region with a curve into the iliac region from an operation in Dec., 1901, for some disease of the appendix. There was tenderness with some rigidity of muscles, especially in the right iliac region, but tenderness and pain also troubled her on the left side, whilst the tenderness was to some extent general. There was some shifting dullness in the flanks but not above the pubes. Under chloroform some thickening was felt in the region of the appendix, but it was a question whether this process had already been removed or not at the former operation.

An incision was made through the right rectus muscle and on opening the peritoneal cavity offensive pus came from the region of the right iliac fossa and right kidney. There was some pus both in the pelvis (where there were old intestinal adhesions) and in the right flank. The ileum and the cæcum were partly coated with lymph, which was irregularly but not widely distributed, and there were some flakes on the bowel towards the middle line and pelvis but in no great quantity. The appendix could not be found at first in the iliac fossa. Finally towards the pelvis a slight bulging which proved to be its apex was discovered, and the finger carried along it freed it with some difficulty from its bed of adhesions and it was removed. The stump was not invaginated but its mucous surface was sterilised with a drop of pure carbolic acid. The abdomen was washed out with gauze sponges in holders and the wound was closed, a glass drain being passed into the pelvis. The appendix was the seat of chronic catarrhal inflammation and presented a large perforation where it had sloughed. The tube was removed on the third day, but the discharge continued for some time. Recovery followed.

These 4 cases presented similar symptoms. Each patient was seized with abdominal pain, vomited, and had moderate pyrexia not above 102° except in Case 4, and the pulse did not exceed 110. The expression did not indicate serious abdominal trouble. Yet there was con-

siderable purulent peritoneal exudation within a few hours of the commencement of the illness and in 3 cases there was perforation of the appendix, and in the fourth case acute inflammation with a purulent collection. In all the mildness of the symptoms in spite of the serious condition of the appendix is striking. Inflammation of the peritoneum had already commenced and it is unlikely that it would have become localised. Probably many patients with septic peritonitis pass through the stage now described only to die a few days later because its importance is unrecognised and operative treatment is neglected. The writer regards early effusion as an indication for immediate operation.

Tuberculosis of the Conjunctiva.—Sydney Stephenson, M.B., C.M. (*Brit. Med. Jour.*, May 3, p. 1077).

CASE 1.—A female child, aged 17 months, was brought to hospital on Oct. 23, 1901. Two months before she "began to lose appetite and flesh," "a sort of lump" was noticed in the right lower eyelid, and an ulcer inside corresponding to the swelling.

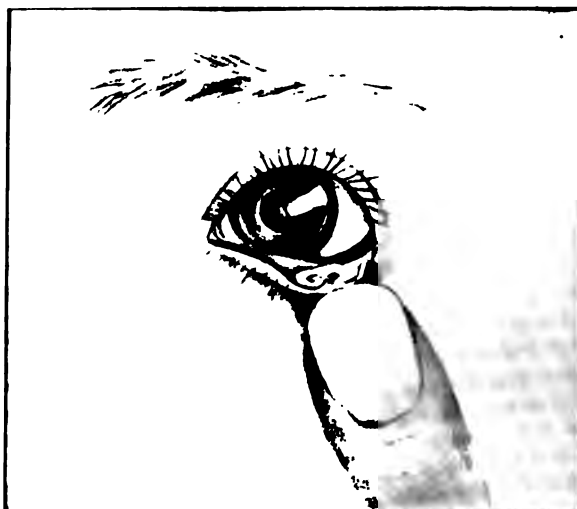
The child was thin and pallid, and weighed 15½ lb. The inguinal and cervical glands were slightly prominent; the spleen was palpable. There were several small circular ulcers upon the buttocks—3 on the right and 1 on the left. The central depressed ulcer, which measured 2 to 3 mm. across, was surrounded by a red areola. The masses appeared to be deposits of tubercle in the subcutaneous tissue. There were moist, broncho-pneumonic sounds over the back of the chest. In the right eye, towards the centre of the free edge of the lower lid was a shallow notch, covered with a greyish deposit. On everting the eyelid there was seen a semi-circular ulcer, continuous with the notch, and coated with greyish-yellow material. The base of the conjunctival ulcer, which measured 7 by 5 mm., was somewhat waxy-looking and nodular.

Several tiny, pale, translucent elevations, which at once suggested miliary tubercles, lay in the conjunctiva near the ulcer. The right preauricular gland was somewhat swollen. Scrapings from the conjunctival ulcer, after staining by the Ziehl-Neelsen and Ziehl-Gabbet methods, showed a limited number of scattered tubercle bacilli. As a rule, the organisms occurred singly, and had to be searched for carefully.

On Nov. 13 when the child was seen there were double optic papillitis, stiffness of the neck, and a typical tubercle in the right choroid to the upper and outer side of the optic disc. The temperature was febrile, and more than once 103° . She slowly sank into a semi-comatose state, and the respirations became of the Cheyne-Stokes type. The temperature rose to 105.5° , and she died on Nov. 17. A necropsy could not be obtained.

CASE 2.—A child, aged 15 months, was brought to hospital on Nov. 27, 1901. The left eye had been red and discharging for about 4 months, and the mother had lately noticed that the edge of the lower lid was becoming notched. The mother had lost a brother, aged 18, and a sister, aged 6 months, from "consumption." A maternal aunt and uncle had also died from that disease. The child had suffered from cough for 2 months, but no physical signs were found except a few rhonchi over the back of the chest. The temperature was 98.6° , the weight $13\frac{1}{2}$ lb.

The lower lid was red and thickened on its outer half and on its free edge was an erosion, continuous with a shallow, semicircular ulcer (10 by 5 mm.) of the palpebral conjunctiva (Fig.). The ulcer had a nodular, lardaceous base, with a few small reddish granulations forming its posterior boundary. There was a similar bunch of insignificant granulations on the free edge of the eyelid, at the junction of its outer and inner half. Scattered tubercle bacilli were demonstrated in scrapings from the ulcer.



Dec. 18.—During the last 3 days, the first phalanx of the little finger of the right hand has been thickened and painful, probably from a tuberculous dactylitis. Under chloroform, the conjunctival ulcer was excised with a Graefe's cataract knife, and its edges were thoroughly scraped with a small, sharp spoon. The wound was filled with a graft taken from the skin of the left upper arm, carefully freed from fat and kept in position by sutures of fine China twist. The excised conjunctiva under microscope, showed several miliary tubercles with typical giant cells. Unfortunately the sections (celloidin) were too thick to detect tubercle bacilli.

Jan. 8, 1902.—The skin graft has healed in position, and there is now no sign of conjunctival ulceration. As the graft is not yet vascularized it has a whitish look.

Jan. 15.—The graft is now becoming red at its edges.

Feb. 4.—Eyes examined under chloroform but no ulceration of the conjunctiva was found.

Tubercle of the conjunctiva is thought to be one of the rarer affections of the eye. But its rarity appears to have been overestimated. Dr. J. W. H. Eyre found amongst 31,000 ophthalmic patients tubercle in 11.

Amongst some 3,000 ophthalmic cases seen at a children's hospital the writer has recognised the 2 cases described. An extraordinary variety of type is presented by the clinical appearance of conjunctival tuberculosis. Thus, Sattler described no fewer than 4 forms—(1) miliary ulcers, (2) miliary tubercles, (3) velvety granulations, and (4) "cockscomb" granulations. To these Dr. Eyre added a group (5) characterized by pedunculated tumour of the tarsal conjunctiva, closely resembling a papilloma or fibroma. The writer's cases furnish an instructive contrast with one another, as the conjunctival ulcer in the first was clearly a part of general tuberculosis with pulmonary, meningeal, and choroidal manifestations, whereas the second case appears to be an example of primary infection. Conjunctival tuberculosis generally belongs to the latter class. One case at least is known in which it followed an operation for squint performed with instruments presumably septic.

Septic Polyarthritis.—G. A. Wright, B.A., M.B., F.R.C.S. (*Lancet*, May 17, p. 1376).

CASE 1.—A married woman, aged 35, was admitted to hospital on Oct. 3, 1901, suffering from "stiffness of all her joints." She had good health until her first and only confinement in July, 1895. The child was stillborn. Seven weeks after delivery the small joints of the hands and wrists became swollen, inflamed, and painful, and within 4 months both great toes were similarly attacked. After the confinement she suffered from a continuous purulent vaginal discharge and in 1896 she was for 6 months in hospital under treatment for this uterine trouble. The discharge continued and towards the end of 1896 the feet and ankles became swollen and inflamed. By June, 1897, they had become fixed and about this time the knees, cervical spine, and jaws became acutely swollen, the hips and shoulders were also attacked, and by the end of 1897 she was rendered completely helpless by the general rigidity of her joints. She then had

marked thickening of the skin of the soles and palms with desquamation and rapid loss of hair. During 1898 her condition seems to have been unchanged and there was still slight vaginal discharge. In the autumn of 1899 "hot-air treatment" was employed. The vaginal discharge ceased at this time, her condition improved, and she was again able to feed herself. From this date she gradually improved as regards movements of the jaw, neck, and hands, though she was still bed-ridden.

The general nutrition was fairly good, the movements of the spine showed little impairment, the mouth could only be opened to the extent of one inch, and the lateral masticatory movements were abolished. The large joints of the upper extremities were enlarged, their mobility was restricted, and the skin covering them was smooth and somewhat reddened. There was no distinct synovial effusion but marked thickening. There was distinct grating on rotation of the shoulder-joint. The wrists were stiffer than the elbows and the movements of pronation and supination were almost lost. The hip-joints were involved to some extent. The knee-joints were swollen, indurated, and partially fixed in flexion, the right being stiffer than the left. The ankles were much less affected. There was a flabby, toneless puffiness of the backs of the hands and fingers, leaving the knuckles marked by depressions; the phalangeal joints were much stiffened, the terminal ones least so. The feet were in much the same condition as the hands.

CASE 2.—A single woman was healthy until the age of 24. One day during a menstrual period she did a heavy day's washing and felt cold. Next morning the left knee was swollen and painful. In spite of treatment the knee got worse. The disease was thought to be tuberculous. The joint was kept at rest for many months and then massage was employed. The other knee became painful and swollen and later the fingers of the right hand, the right ankle, and then all the other joints of the limbs in rapid succession.

She has been confined to bed 5½ years and has changed little during the last 2. She has had some inflammation about the toe-nails. She has now no motion in any joint. All that she can do is to move her head, and even that motion is limited. The elbow joints are the most swollen and glossy and often ooze a watery fluid. She has had some irregular menstruation but never leucorrhœa.

A single woman, aged 22, had a tuberculous family history. About 14 she had leucorrhœa which lasted almost without intermission till about 12 months ago. She was admitted to hospital on Jan. 1, 1902, complaining of pain and swelling in the right ankle. About 3 years before the left foot and ankle suddenly became very painful and swollen. She was in bed for 3 weeks, and recovered in a month. Three or 4 months later the right foot became swollen and painful and has remained so ever since, though the swelling is not so great as it was. At first the inflammation was acute and the skin was red and hot, but after a few days the active symptoms passed off, only the pain remaining. The wrists and left shoulder have also at times become swollen and painful and the right calf has latterly been much swollen and very tender.

She was very anæmic. There was a somewhat pulpy swelling pushing forward the extensor tendons of the right ankle; there was also a little œdematous thickening over the malleoli, and slight swelling on either side of the tendo Achillis. Movement was limited and was accompanied by crackling. There were pain and tenderness but there was no redness about the joint. There was also pain in the left ankle and left wrist and in the right metatarso-phalangeal joint. The right calf was somewhat œdematous and very tender. There was a slight vaginal discharge which ceased after a few days' treatment.

A study of these 3 cases shows an affection which attacks many joints though it may begin in a single joint, lasts for years, may give rise

to most complete crippling, shows no tendency to suppuration, may leave a joint intact, may subside and recur repeatedly, and does not produce nodular, bony, or cartilaginous outgrowths, or hydrarthrosis. In this disease soft parts other than joints may be inflamed and the skin and nails may be the seat of trophic changes. The general health is not gravely impaired. Rheumatic arthritis may be excluded since there are no osteophytic growths or hydrarthrosis and neither the course of the disease nor the implication of non-articular structures supports a diagnosis of this hotch-potch of unclassified joint troubles. A diagnosis of chronic rheumatism does not go further. Sometimes conditions of joints closely resembling these are seen as sequelæ or complications of typhoid fever and in septicæmia. For example, a girl, aged 11, had acute necrosis of a metatarsal bone after a blow. Pain, swelling, and stiffness of the ankles, knees and hips, and endocarditis followed. Acute tuberculous joint disease is worth entertaining, and possibly in Case 3 the ankle is tuberculous. In similar cases that the writer has seen he has been strongly impressed with the possibility of tubercle being a factor and has thought that the mischief might be due to a mixed tuberculous and other process. Case 2 had evidently been treated as tuberculous.

No doubt such cases are instances of septic arthritis—i.e., are directly due to absorption of one or other of the ordinary septic organisms from some unhealthy or enfeebled area. In the case mentioned above the condition resulted from acute septic periostitis. In the pus staphylococci alone were found. Many similar cases have been recorded in which injury or the depressing effect of cold and wet have lit up acute infective processes. Gonorrhœal rheumatism, so-called, produces exactly similar conditions. It is well known that without obvious suppuration septic arthritis is likely to end in a stiff joint. The writer thinks that 2 of these cases are instances of ankylosing leucorrhœal polyarthritis, one in a far advanced and one in an early stage, and that

Case 2 is a similar condition due to absorption of poisonous material from the genital tract from disturbance of the menstrual process by cold and fatigue. A menstrual synovitis is mentioned by Barwell and a similar condition arises during pregnancy (See also "Effusion of the Knee-Joints in connection with Menstruation," "REVIEW," Vol. IV., p. 201). Thus slight uterine disorders, such as leucorrhœa, may give rise to troublesome arthritis, which does not subside until the absorption of the poisonous material is checked. In a doubtful case of joint disease the probability of some such cause should be carefully considered. Such cases if neglected may go on to crippling. They can often be recognised by the peculiar indurated condition of the peri-articular tissues which persists after the acute stage is over if the mischief has been at all severe.

TREATMENT.—Get rid of the septic focus as quickly as possible. As regards the joints, rest and soothing applications at first, with massage, inunction of oleate of mercury, and a course of iodide of potassium later, are probably the best measures. In these, as in most cases of stiff joints, active movement is of much more value than passive, except in cases of adhesions.

Amputation of the Thigh under Spinal Anæsthesia.—Robert H. Ritchie, M.B., B.S. (*Intercolonial Med. Jour. of Australasia*, Jan. 20, p. 13).—A man, aged 78, was admitted to hospital with dyspnœa and œdema of the legs. He had a mitral systolic murmur, displacement of the cardiac apex to the left and downwards, and atheromatous arteries. The pulse at times was almost imperceptible. It improved under digitalis and the œdema disappeared. Moist gangrene of the right leg occurred and extended upwards within 2 inches of the knee. In consequence of the heart disease general anæsthesia was thought inadvisable.

A 2 per cent. sterilised solution of eucaine was injected into the skin about $\frac{1}{4}$ in. to the right of the middle line and midway between the third and fourth lumbar spines. A nick was made in the insensitive skin and the needle of a Luer's syringe was pushed upwards, forwards and inwards, but the spinal canal could not be reached. The process was repeated on the left side and the needle was passed into the spinal canal and cerebro-spinal fluid dripped from it. After about 30 m. had escaped 30 m. of distilled water, containing $\frac{1}{4}$ gr. of cocaine, were slowly injected. The syringe and needle were left in position so that more cocaine could be injected if necessary. The left leg was repeatedly pinched. 20 minutes after the injection the patient still said that he felt a pinch distinctly and he could localise it. Notwithstanding this it occurred to the writer that the skin might be analgesic. He made a small incision in the left calf and the patient on being asked said that he felt nothing. The incision for the anterior flap was commenced in the thigh. The patient said he felt no pain though he knew that the leg was being touched. The needle was withdrawn from the spinal canal, the puncture was closed with collodion, and the patient was placed on his back with a towel over his face. The operation was completed painlessly. When the femur was being divided he could hear the sawing and knew the bone was being divided. The femoral artery and vein were thrombosed and the cut muscles were brown. About 2 hours after the operation the patient complained of abdominal pain and became very excited. He passed a bad night and when he took even a little water he vomited. In the morning he still complained of pain in the abdomen. The pulse was very irregular and much weaker. He slept all day but he awoke at night and took nourishment well. The wound healed by first intention.

Vomiting is one of the symptoms which may result from spinal injections of cocaine. This case tends to show that in spinal anæsthesia loss of sensibility only to pain (analgesia) is produced.

Urethral Hæmorrhage in Gonorrhœa.—

J. F. Dobson, M.S., F.R.C.S. (*Lancet*, May 31, p. 1525). CASE 1.—A man, aged 26, contracted gonorrhœa. A profuse discharge persisted for a fortnight and then diminished. He used an injection of potassium permanganate and took capsules of santal oil. At the end of a month there was only a little pain on micturition and slight urethral discharge. After coitus, there was profuse hæmorrhage from the urethra. When seen about half an hour afterwards he had evidently lost a quantity of blood. His shirt and trousers were soaked, and bright blood was issuing rapidly from the urethra. The hæmorrhage was arrested with some difficulty by the external application of ice and by injecting into the urethra a weak solution of tincture of hamamelis. The bleeding recurred 2 days afterwards but it was not so profuse and was easily arrested.

CASE 2.—A miner, aged 17, was brought to hospital in an ambulance bleeding profusely from the urethra. He had contracted gonorrhœa 6 weeks before and had had a urethral discharge ever since. The bleeding had commenced when he was working in the pit. He had lost a quantity of blood and a stream of bright blood was proceeding from the meatus. The urethroscope tube at first revealed nothing owing to the bleeding, but after mopping the blood away with pieces of wool in holders and inflating the urethra with air, bright blood was seen oozing from a congested granular-looking patch in the floor of the bulbous urethra. Under the guidance of the electric light a piece of wool dipped in solution of perchloride of iron was applied to the diseased area. The bleeding ceased at once. Under a 1½ per cent. protargol injection and the application of a 10 per cent. solution of protargol to the diseased portion of the urethra through the urethroscope the discharge rapidly diminished and the patient was cured at the end of 3 weeks.

CASE 3.—A man, aged 24, had contracted gonorrhœa 3 months previously. He had a

persistent discharge and on several occasions there had been bleeding from the urethra. It was liable to come on after any exertion. He had taken various drugs and had used a variety of injections; a metal sound had been passed twice. He was seen a few days after a smart attack of hæmorrhage. A muco-purulent discharge could be expressed from the urethra containing gonococci. The meatus, which was extremely narrow, was incised, the urethroscope tube was passed, and the urethra was inflated with air. A congested papillary patch was found in the penile urethra, which bled readily on touching it with the probe. The remainder of the anterior urethra was apparently healthy and there was no evidence of posterior urethritis. At intervals of 4 or 5 days the diseased patch was thrice swabbed with a 20 per cent. solution of protargol through the urethroscope; a 1½ per cent. injection of protargol was also used night and morning. After 3 weeks treatment the discharge had ceased and there was no further hæmorrhage.

There are comparatively few references to this complication in medical literature. Erichsen says: "Hæmorrhage from the urethra may occur as the result of chordee and consequent rupture of some blood-vessels of the corpus spongiosum, as the consequence of attempts at passing the catheter, or as a simple oozing from the inflamed mucous membrane." White and Martin mention hæmorrhage at the end of micturition in acute posterior urethritis. "The hæmorrhage may be very free and will pass back into the bladder and the patient will pass it mixed with the urine at the termination of the act." Again, "'Russian clap' is the name applied to gonorrhœa of a hyper-acute type with lymphangitis, obstinate chordee, and free bloody discharge. Bleeding is due to the rupture of the intensely congested vessels of the urethral mucous membrane and both the pus and the semen are tinged with blood." Güterbock describes this complication under the name of black or Russian gonorrhœa. Lydston mentions bleeding in

association with severe chordee, Grünfeld a case of gleet with hæmorrhage from the urethra in which the urethroscope showed a polypus which was removed with the snare.

Evidently therefore, bleeding may occur either in the acute or in the chronic stage of gonorrhœa; in the acute stage with severe chordee or with posterior urethritis. This is rarely profuse, generally a mere tinging of the discharge; it would be most unwise to use the urethroscope. In the chronic stage the bleeding may be profuse or slight. Profuse hæmorrhage may occur after exertion or after coitus. The bleeding in the majority of these cases arises from a granular or papillary patch in the anterior urethra; it may be very profuse and may demand immediate treatment. Slight and repeated hæmorrhages may occur in patients suffering from gleet and may arise from urethral polypi, papillomata, ulcer, or granular patch.

TREATMENT.—In the acute stage the hæmorrhage in itself does not call for special treatment. In the chronic stages, when the hæmorrhage is profuse Erichsen recommends the application of ice or the introduction of a large gum-elastic catheter and pressure by means of a bandage to the penis and perineum, probably an exceedingly uncomfortable method of treatment. Rest in bed with elevation of the penis, ice to the perineum, and the use of a weak astringent injection such as sulpho-carbolate of zinc may be successful. The best results are obtained by the use of the urethroscope. The tube is introduced into the urethra and the blood is removed with fragments of wool in holders; the urethra is then inflated with air, which in itself tends to check the hæmorrhage, the light is applied, and the urethra is inspected. Blood may then be seen issuing from the diseased area. The tube is passed down to this area, the urethra is deflated, and a fragment of wool dipped in a solution of perchloride of iron is applied to the bleeding surface. Other solutions may be used in

preference to the iron, such as tincture of hamamelis, adrenalin, etc. This treatment increases the amount and purulency of the discharge. The latter may be controlled by the use of an injection of protargol and the occasional application of a 10 or a 20 per cent. solution of protargol to the diseased area through the urethroscope. If the gleet is due solely to this patch of disease, and not to a posterior urethritis, chronic vesiculitis, or prostatitis, it will be readily cured. If the discharge and hæmorrhage are due to a polypus or papillomata they can be satisfactorily diagnosed and treated only by means of the urethroscope.

Arthritis from Ophthalmia Neonatorum.—C. O. Hawthorne, M.D., M.R.C.P. (*Lancet*, May 31, p. 1529).—Mr. Clement Lucas pointed out that the purulent ophthalmia of newly-born infants may be associated with arthritis analogous to that of urethritis. Cases have been subsequently recorded by others, but they are not numerous.

Two days after birth a child had an abundant purulent discharge from the conjunctiva, which continued for 3 weeks. When the child was a fortnight old the right shoulder-joint became considerably, and the right wrist slightly, swollen apparently without causing much discomfort. The swelling subsided in the course of a fortnight without active treatment. The father had gonorrhœa 2 months before the child was born and the mother was subsequently infected.

The child came under observation at the age of 6 weeks. There was still slight mucopurulent discharge from the conjunctivæ and the right cornea presented a small abrasion from which a diffuse haze extended. Perhaps this explained the further outbreak of arthritis. For while the joints which were first attacked—the right shoulder and wrist—had completely regained their normal condition, the left elbow-joint was much enlarged and the swelling extended down

the radial side of the forearm for a considerable distance, giving here a sensation of deep fluctuation, as though the sheaths of the muscles were involved. The skin was not reddened. The limb was fixed and the local treatment of the ophthalmia continued. In from 2 to 3 weeks the elbow-joint and forearm had regained their normal characters.

Mr. Clement Lucas recognises 2 varieties of arthritis associated with ophthalmia neonatorum—(1) a very acute form with features suggesting a tendency to suppuration and (2) a milder form accompanied by much effusion and pain on movement but with little or no surface redness. A feature worthy of note is the extension of the swelling beyond the limits of the joint cavity. This is a well-recognised event in many cases of arthritis of urethral origin and Mr. Sydney Stephenson has drawn attention to "effusion into the sheaths of the tendons" in the neighbourhood of the affected joints in cases in which the primary gonococcic inflammation involves the conjunctiva. The joints most commonly affected appear to be the knees and wrists, but in the present case the knees escaped. The promptness and completeness of the restoration of the joints to normal is in harmony with other records and contrasts with the obstinacy of gonorrhoeal arthritis. The explanation is doubtless to be found in the ease and readiness with which purulent ophthalmia can be successfully treated as compared with gonorrhoea.

for 5 days before admission there was complete obstruction. The pain increased, and there was pyrexia. Below the umbilicus in the middle line was a tense, elastic, oval, tender tumour of the size of a head, which could be moved laterally, and was not connected with the genital organs. Resonance over it was but slightly impaired. The urine contained albumin. Volvulus of the sigmoid flexure, or internal strangulation of the upper part of the small intestine with secondary peritonitis was suspected. At the laparotomy, general peritonitis with fibrinous deposits on the intestines was found. The bluish-red cedematous tumour consisted of the lower end of the ileum and the cæcum which had been twisted about 180° on their mesenteric axis in the direction of the hands of a clock. The meso-colon was abnormally long. The intestine above the volvulus was moderately distended. There was no difficulty in releasing the twisted intestine. It was then seen that the lower part of the ileum and the cæcum with the vermiform appendix were invaginated into the ascending and transverse colon. The walls of the intussusception were cedematous and thickened, and some of the mesenteric vessels were thrombosed. During unavailing attempts at reduction the semi-gangrenous walls ruptured in several places. The patient became collapsed. Resection of the tumour being, therefore, impossible, and its condition precluding reposition in the abdominal cavity, an anastomosis was made between the ileum 6 to 8 in. above the intussusception and the transverse colon, and the tumour which had escaped from the peritoneal cavity was fixed by sutures outside the wound, wrapped in sterile gauze, and fomented. The peritoneal cavity was shut off as much as possible by tampons. The pulse gradually became perceptible, and the subnormal temperature rose. On Oct. 12 the bowels acted spontaneously. Several sloughs separated from the extra-abdominal mass, which consisted of 2 to 3 feet of colon and ileum with the cæcum, without perforation of the intestine, and which after the evacuation of a deep abscess on

Volvulus of the Cæcum (1) with Intussusception, (2) with Internal Strangulation and Irreducible Hernia.—Dr. V. Chlumskey (*Wien. Klin. Rundschau*, Aug. 18, 1901, p. 581).

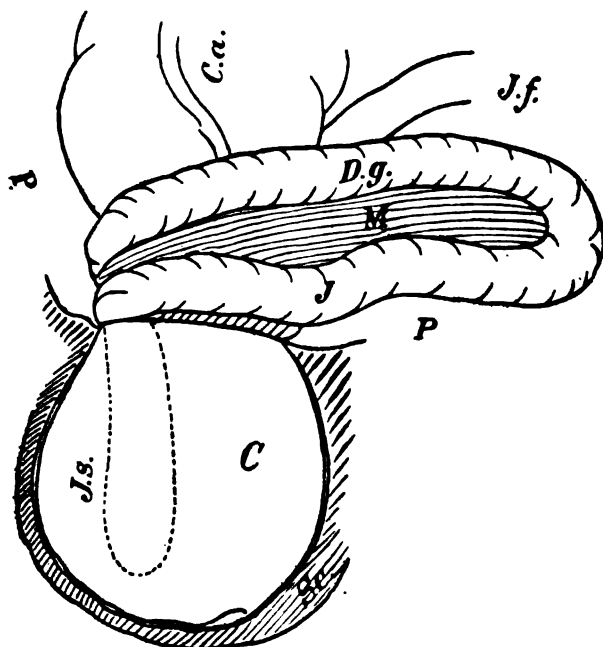
CASE 1.—A woman, aged 26, entered hospital on Oct. 10. She had 4 children. Three weeks before admission she was seized with pain in the hypogastrium, rigors, and vomiting of undigested food. This condition lasted a week. The bowels at first acted regularly, then only after enemata;

its right, became covered with granulations and steadily contracted. By Dec. 3 it was retracted within the abdominal cavity, and on Dec. 17, after a plastic operation, the wound completely healed. The patient was discharged in good health and with no intestinal symptoms.

CASE 2.—A man, aged 28, was suddenly seized with abdominal pain while lifting a heavy weight, and began to vomit. Complete intestinal obstruction supervened. The patient was admitted to hospital moribund on the fourth day. He had had a right scrotal hernia of the size of a child's head for many years, and lately this had become irreducible. Strangulated scrotal hernia was diagnosed.

NECROPSY.—There was general peritonitis. The hernia contained the cæcum and the lower part of the ileum. They were slightly twisted on their common mesenteric axis (120° to

150°) in the reverse direction to the hands of a clock, and were partially adherent to the neck of the sac, but were not strangulated. The lower end of the ileum (J.s.), close to the posterior wall of the sac, ascended into the abdominal cavity and crossed over (D.g.) to the left from behind the ascending colon (C.a.). The returning coil (J.), which was continuous with the rest of the ileum (J.f.), in crossing the coil (D.g.) compressed it against the posterior surface of the abdominal wall, the twisted colon, mesentery, and part of the neck of the hernial sac, so that it became strangulated and completely gangrenous. The volvulus in the hernial sac was not sufficiently tight to have threatened life, and death was entirely due to the internal strangulation of the ileum. The diagnosis was, therefore, incorrect.



C. Cæcum.—Sc. Scrotum.—C.a. Ascending Colon.—J. Ileum.—J.s. Lower end of ileum.—J.f. Healthy coil of ileum.—D.g. Gangrenous coil of ileum.—M. Mesentery.—P. Peritoneal cavity.

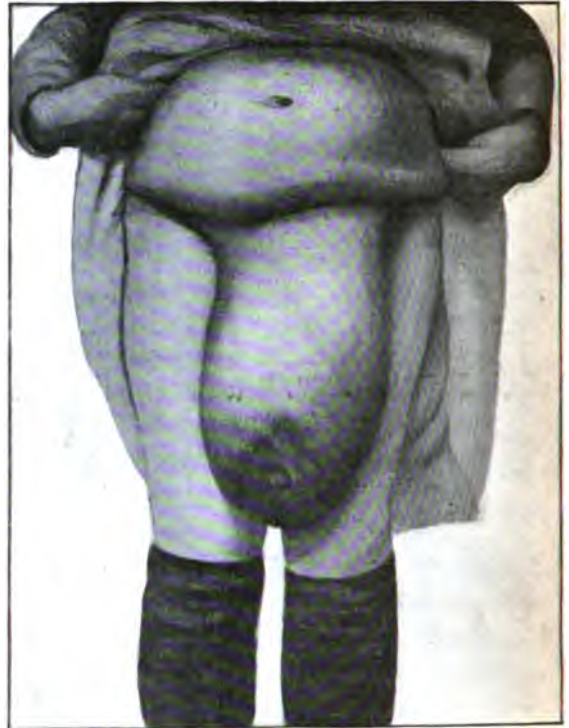
Appendicitis with General Peritonitis: Removal of Appendix: Secondary Incision into the Cæcum for Extreme Paralytic Distension.—Frank Cole Madden, M.B., F.R.C.S. (*Lancet*, May 31, p. 1533).—A man, aged 35, was suddenly seized with pain in the abdomen, and rapidly developed all the symptoms of appendicitis. On Feb. 19 he was in great pain, and had general distension of the abdomen, but no definite tumour could be made out. Operation was performed within 36 hours of the onset. Thin, lymphous pus escaped as soon as the peritoneal cavity was reached. There was considerable distension of the whole of the intestines and intense general peritonitis. The appendix was deeply placed in a pouch to the outer side and behind the cæcum, and was with difficulty removed. There were patches of almost gangrenous inflammation on the cæcum and the adjacent coils of small intestine. The appendix was soft and gangrenous and contained two large concretions, just above the lower of which was a ragged perforation. The appendix was ligatured close to the cæcum and removed, but all attempts to cover the

stump with peritoneum were unsuccessful as the sutures cut through the soft inflamed tissues. Pus welled up everywhere between the coils, but tended to collect towards the pelvis and in the pouch which contained the appendix. The peritoneal cavity was not washed out but the pelvis and the pouches round the cæcum were gently swabbed with sterilised gauze and a gauze drain, running down to the stump of the appendix, was brought out through the middle of the wound in the abdomen, which was sutured in layers.

The day after operation there was a great improvement. The pulse was good (82) and the temperature was 98·8°, but there were still much abdominal distension and troublesome hiccough. After an enema of soap and water and turpentine much flatus and some fæces were passed with considerable relief. The wound was dressed after 48 hours and the drain renewed. Calomel gr. $\frac{1}{10}$ was administered on the following day every half hour for 3 doses and then hourly until the bowels acted. Six hours later the peritonitis seemed to light up again and with it the distension rapidly increased to an alarming extent. Distended transverse colon could be made out nearly to the nipple line on both sides and there was considerable respiratory difficulty and cardiac distress. The temperature was 104°, the pulse was 140 and markedly peritonitic, and the general condition very grave. Vomiting and hiccough set in, and the vomited matters became rapidly fæcal. Large quantities of offensive dark-brown fluid were pumped up, which on standing deposited fæces. During the night the distension appeared to become even greater in spite of turpentine enemata, strychnine injections, fomentations, turpentine stupes, etc., and the fæcal vomiting was practically continuous. The patient appeared to be dying. At 5 a.m. on the following morning, Feb. 26, the writer removed the middle sutures of the abdominal wound and made an incision into the cæcum, which presented in the depths and which he had no hesitation in opening in situ, as he felt certain that all the parts in the

neighbourhood must have become adherent all round and so have shut off the area of operation from the general peritoneal cavity. Much fæcal, brownish discharge, and flatus came away. It was identical with the vomit. The tube of an irrigator was then passed into the rectum and the whole of the large intestine was thoroughly irrigated with boric lotion, which all came away by the wound in the cæcum. To prevent risk of leakage of fæcal matter into the peritoneal cavity 4 anchoring sutures were inserted to keep the cæcum in close contact with the abdominal wall. The patient was given 2 large draughts (one pint) of warm water, which were soon returned but fulfilled their purpose of washing out the stomach. The fæcal vomiting completely ceased. From the moment of the cæcotomy the patient's condition improved, his temperature gradually returned to normal, and all the grave symptoms subsided. The wound was left widely open and packed with gauze to induce it to heal by granulation from the bottom, while the fæcal fistula discharged freely in the centre. Gradually more and more of the fæces were passed by rectum. On March 11 the skin and subcutaneous tissues around the whole area of operation were infiltrated with Schleich's fluid and several deep silkworm-gut sutures were inserted to approximate the granulating surfaces of the sides of the wound, leaving a small opening in the centre at the side of the fistula. The wound gradually filled up with granulations. The projecting ring of membrane was destroyed by frequent applications of silver and 2 rows of mattress sutures of fine silk were inserted across the fistula, completely closing the opening. This operation was not completely successful as the middle sutures cut through and the fistula was re-established but was of much smaller calibre. A further attempt of the same kind also failed and the patient left in good general condition but with a rapidly closing cæcal fistula. The bulk of the fæces passed by rectum, the discharge from the cæcum being soft and semi-fluid and only profuse at night.

The case is of interest mainly because of the recovery from an apparently hopeless condition. A first attack of appendicitis terminating within 36 hours in general peritonitis shows the dangers of delay in operation in fulminating cases. The great improvement following the original operation, in spite of the fact that the peritoneal cavity was not washed out and was only partially drained, shows in this instance, at any rate, the power of the peritoneum to take care of itself, even though already intensely inflamed. Perhaps if enterotomy had been done at the first operation and sulphate of magnesia had been injected into the bowel the further progress of the case might not have been satisfactory, but the distension did not seem sufficient to justify such a procedure. Apparently fresh wave of peritonitis occurred after 7 days and this, rather than any intestinal condition, determined the excessive distension, for the bowels were acting fairly at the time of the onset of the alarming symptoms. The intestinal obstruction was due entirely to the paralytic distension for which any operation other than the cæcotomy would have been impossible owing to the patient's grave condition.



Enormous Inguinal Hernia.—T. Landan (*Berlin. Klin. Woch.*, May 26, p. 505) on May 7 showed a woman, aged 59, before the Berlin Medical Society with a large pendulous vulval tumour (Fig.). It was said to have originated as a small nodule more than 20 years before, and to have slowly attained its present dimensions. It caused no trouble. The woman had never sought advice and would not have consulted the writer but for the recent formation of pressure sores over the lower part of the tumour. The bowels acted regularly and urine and micturition were normal. The base of the tumour reached from the right external inguinal ring to beyond the left external ring, and measured $11\frac{1}{2}$ in. (29 cm.) in length. The right labium majus and minus, the clitoris, and the left labium minus were normal. The

left labium majus and the left half of the mons Veneris were incorporated in the substance of the tumour, and formed its pedicle. The maximum circumference of the tumour was 26 in. The skin over the upper part was normal, but the lower was covered with suppurating ulcers and depressed cicatrices. Owing to the absence of resonance and of an impulse on coughing, and to the impossibility of reposition a tumour of the normal vulval constituents, probably a fibroma or fibro-lipoma, appeared to be more probable than a hernia, although a cylindrical swelling, which was continuous with the tumour, could be traced into the left inguinal canal. Other possibilities were elephantiasis, and a tumour of the round ligament (myoma, adeno-myoma, or adeno-cystoma). At the operation on May 9, the condition was found to be due to an inguinal hernia. Landan reduced the contents, completely resected the sac, and closed the neck with

sutures. The absence of resonance was explained by the great adipose deposit in the subcutaneous cellular tissue surrounding the sac and to the presence of a large amount of hernial fluid.

expectoration becoming free from blood. No further evidence of fat was noticed either in the sputum or urine. The drowsiness and other mental symptoms gradually disappeared. He left the hospital at the end of a month wearing a plaster-of-Paris bandage, good union having taken place and the wound having healed without suppuration.

The case is a good illustration of "fat-embolism," a complication occasionally observed in fractures, simple as well as compound, owing to absorption of broken-up fat-globules by the blood-vessels. It is believed that in consequence of the crushing or splintering of the bone the fat-globules of the medulla gain access to the venous circulation through openings in the vessels near the fracture, and these acting as emboli are carried by the blood-stream until they become arrested in the capillaries of various organs, most commonly of the brain, lungs, and kidneys. Probably fat-embolism is more frequent than is generally supposed, the symptoms being overlooked in slight cases. In this case the drowsiness and other mental symptoms for several days after the injury were undoubtedly due to blocking of the capillaries of the brain by particles of fatty matter. The presence of fat in the sputum and urine showed that the lungs and kidneys were also affected. In severe cases the cerebral and pulmonary circulation may be so much interfered with, owing to blocking of the vessels, that death results. In the former case the patient becomes comatose, in the latter he suffers from dyspnoea and other signs of pulmonary obstruction.

Lumbar Puncture in the Treatment of Fracture of the Skull.—E. Rochard (*La Presse Médicale*, April, p. 411).—Tuffier first pointed out the value of lumbar puncture in diagnosing fractures of the skull. The constant presence of blood in the cerebro-spinal fluid indicates a solution of continuity; but blood is found after the slightest concussion as well as in

Fat-Embolism after Fracture: Fat in the Sputum and Urine.—F. A. Southam, M.A., M.B., F.R.C.S. (*Lancet*, May 3, p. 1240).—A male, aged 43, was admitted to hospital with compound fracture of the right tibia, about its middle, which was caused by a bale of cotton having fallen across his leg. There was a small punctured wound at the seat of fracture, slight bruising, and no apparent displacement or comminution. The fracture was treated in the ordinary way, the wound being syringed with a solution of perchloride of mercury, a dry dressing being applied and the limb being put up on a back splint with a footpiece. Next morning the patient was unusually drowsy and his mental condition was impaired. In the evening he rambled slightly in his talk and made attempts to get out of bed. The temperature was 100.4°. On the fourth day the drowsiness was more marked, so that he was with difficulty aroused. When awakened and raised in bed for the purpose of feeding he would quickly lapse into a state of somnolence, even while supported in the arms of a nurse. On several occasions he coughed up blood-stained sputum. The temperature was 100°. On the fifth day a number of minute globules were noticed floating on the surface of the urine. Microscopic examination showed that they consisted of fat, for they were stained blackish by osmic acid. The temperature was normal and afterwards remained so. On the seventh day examination of the blood-stained expectoration showed numerous fat-globules mixed with red blood-cells. There was evidence of consolidation at the base of the right lung. There was no dyspnoea or other signs of pulmonary obstruction. The patient then rapidly improved, the lung clearing and the

fractures. The writer believes that lumbar puncture has a greater therapeutic than diagnostic value.

CASE 1.—A child sustained a blow on the head and was brought to hospital comatose, with limbs relaxed and eyes open and fixed. Lumbar puncture was performed to ascertain the presence of blood in the cerebro-spinal fluid. Immediately the child was aroused and released himself from the nurse who was holding him. Only 3 cc. of the cerebro-spinal fluid were withdrawn.

CASE 2.—A man fell backwards down stairs. The diagnosis lay between meningitis, contusion of the brain, and fracture of the base of the skull. Lumbar puncture yielded a fluid which escaped in jets from the cannula and which was deeply stained with blood. The high tension of the fluid suggested compression of the nerve centres. Between 30 and 40 c.c. were withdrawn. In the evening he awoke from his torpor, recognised his surroundings, and replied readily to questions. Vomiting ceased and headache became less severe. In 11 days he was so well that he wished to leave hospital.

Besides the cases in which lumbar puncture may be employed to obviate the ill-effects of increased intra-cranial pressure there are others, resulting from severe injuries to the head, in which it does much good. There are cases of chronic *meningo-encephalitis*, in which mental symptoms and headache are prominent. The headache is usually violent and obstinate, resisting all treatment and rendering the patient's life unbearable. The writer has seen it cured completely by lumbar punctures, repeated more or less frequently as occasion required.

CASE 3.—An electrician received a violent electric shock and fell from a height of about 26 feet. He was brought to hospital in a state of coma with every symptom of a fracture of the vault of the skull radiating to the base. There were ecchymoses behind the mastoid processes, and under the conjunctivæ, and bulging of the parietal bones. After 2 days, he recovered

consciousness, but had severe pains in the head. Eighteen c.c. of red-stained cerebro-spinal fluid were withdrawn by lumbar puncture, and in a few minutes he felt so much relieved that he asked why it had not been done before. About 8 hours after the first puncture the headache returned. Next day the operation was repeated. When 10 c.c. of fluid had been withdrawn the headache was much better. In all 16 c.c. were removed, and this produced slight nausea and some deafness. After the operation the patient slept for some hours, and on waking had no headache, nor has it returned since.

CASE 4.—A mason, aged 50, fell from the second storey of a house and fractured his skull at the base. He was brought to hospital in a state of coma. Lumbar puncture was at once performed, and he began to recover consciousness. But he complained of headache which prevented sleep. A second puncture withdrawing 8 c.c. of cerebro-spinal fluid eased him a little. Nine days after the accident a third puncture was made, and 30 c.c. were withdrawn. This caused the pain to disappear almost entirely from the frontal region but did not relieve it at all in the occiput. A week later 42 c.c. were withdrawn, and the patient felt distinct relief. For about a day the head did not ache; then the pain returned. A fifth puncture was made, and 41 c.c. of fluid were withdrawn. The centrifuge showed that the fluid did not contain blood. Three more punctures were made at the request of the patient, and since then the headache has disappeared completely.

The writer believes that in these cases lumbar puncture served not only to cure the headaches, but also promoted the prompt return of the mental faculties, by favouring absorption of effused blood. A similar case is reported by M. Schwartz. A man with a fracture of the base of the skull had severe headache 8 days after the accident. Twenty-five c.c. of cerebro-spinal fluid were withdrawn by lumbar puncture. In 48 hours all pain had disappeared, and did not return. Poirier has seen

headaches greatly relieved by lumbar puncture, the patients complaining only of slight heaviness of head. Marie and Le Guillian have tried lumbar puncture with success in headaches of syphilitic origin.

Perforation of the Gall-Bladder Simulating Perforation of Gastric Ulcer.—Mr. G. P. Newbolt (*Lancet*, May 31, p. 1534).—A married woman, aged 48, was seen on March 15. She was very ill, and evidently had some grave abdominal lesion. She had suffered for some years from attacks of dyspepsia but had never had hæmatemesis or jaundice. For about a week before she had dyspepsia and for two nights had not slept on account of the pain referred to the umbilicus. During this time she had only taken a little liquid food. At 10 a.m. on March 15th she was seized with agonising pain at the umbilicus which caused her to double up and collapse. Three hours later the pulse was 110, feeble, and compressible; the abdomen was not distended but was hard like a board and tender all over, and her temperature was 102°. The liver dulness was present.

The abdomen was opened in the middle line above the umbilicus. Yellow, turbid, serous fluid was seen amongst the coils of small intestine. Thorough examination of the stomach, back and front, revealed no perforation and so it was distended with a pint of water passed by means of an œsophageal tube. The fluid did not escape. The incision was therefore enlarged down below the umbilicus. On introducing the hand into the right flank a large gall-stone was felt in the cystic duct and a much distended

gall-bladder, adherent to the liver, which was enlarged. There was a minute hole in the gall-bladder from which thin, puriform fluid was escaping. A transverse incision was made into the right loin; the gall-bladder was exposed and opened freely and 6 large stones were removed, one being impacted in the cystic duct. It was necessary to cut away the sloughing part of the gall-bladder which was behind and to the inner side of the fundus; the edges were then inverted and sewn over completely closing the cavity. Having thoroughly cleansed the abdominal cavity a gauze pack was left in leading down to the gall-bladder, and the right flank was drained by placing a tube below the kidney. The patient stood the operation well and promised at first to make a good recovery; she sank, however, 5 days after the operation, apparently from exhaustion. There were troublesome vomiting and slight distension unrelieved by salines or enemata.

When a stone ulcerates through the gall-bladder mischief is usually avoided by the adhesions which glue the affected organs to neighbouring parts, either the viscera or the abdominal wall. Several cases have been recorded by different observers in which acute peritonitis has been set up by a perforation of the gall-bladder the contents of which have escaped into the abdominal cavity, and in one or two instances also operations have been successfully performed. In the case related above it was impossible to make a diagnosis from perforated gastric ulcer. Close interrogation of the patient elicited no history of gall-stones and she had always referred her pain to the region of the stomach. She had never been jaundiced.

OBSTETRICS AND GYNÆCOLOGY.

Dysmenorrhœa.—G. Ernest Herman, M.B. Lond., F.R.C.P. (*Brit. Med. Jour.*, May 17, p. 1193).—There are two kinds of menstrual pain—one produced by the congestion of the pelvic organs which precedes menstruation, the other by the contractions of the uterus. The first pain is the commoner, and is felt more or less by most women. It is a general aching which is diffused over the lower abdomen and lower part of back, and often extends down the thighs. It may be accompanied by aching in the breasts, and begins from a day or two to a week before menstruation, and continues until the flow has become as copious as is customary for that patient. It is always better while the patient is lying down. It is never bad enough to produce objective evidence of severe suffering.

There is one morbid condition which produces abnormal congestion of the uterus and consequent pain. If the uterus is bent back and the utero-sacral ligaments are well marked and firm, the veins which return the blood from the body of the uterus will be pressed upon, the return of blood will be hindered, the body of the uterus will become swollen and tender, and the patient will suffer pain before and during menstruation, and often at other times as well. This menstrual pain is cured by preventing the uterus from falling back.

Contraction of the uterus is not usually painful. Contractions occur throughout pregnancy, but the patient is not aware of them. The pain of labour is only in small part, if at all, due to uterine contraction; it is due to the stretching of the soft parts. The contractions which expel the menstrual flow are little or not at all felt by most women; but in a few they are painful. This is dysmenorrhœa in the literal sense. Cases occur in which painful uterine contractions

accompany menstruation because there is obstruction to the flow. Rarely is this obstruction in the canal, which may be contracted by cicatricial tissue formed after an operation on the cervix, or by a new growth bulging into it. Now that amputation of the cervix is seldom practised, cicatricial contraction is a curiosity, and the same may be said of blocking of the canal by a new growth. In some patients the endometrium, instead of breaking down into a pulp, is shed in a large piece or pieces, and such a piece may stick in the cervical canal and provoke painful (contractions) membranous dysmenorrhœa. It was supposed that ante flexion caused kinking of the canal, and so difficulty and pain in menstruation; but specimens of this condition show no angle but a gentle curve of the canal no more obstructing the flow of fluid along it than do the natural curves in the male urethra. Ante flexion is present with exactly the same frequency in women who menstruate without pain as in those who menstruate with pain. The virgin uterus is more or less ante flexed. It was at one time widely taught that the common cause of menstrual pain was narrowness of the os externum. This idea was supported by the frequent cure of the pain by dividing the vaginal portion with the scissors. But in most cases in which this treatment succeeded the os uteri could not have been so very small, for it would allow the end of the scissors blade to enter, and a good deal of blood can quickly escape from a hole as large as a scissors point. Moreover, cases are now and then seen in which the os externum is so small that only a fine probe can be passed through it, and in some such cases menstruation is painless. Dysmenorrhœa has been said to be a result of imperfect development of the uterus. The evidence is far from conclusive. The writer finds that in cases

of spasmodic dysmenorrhœa the patients began to menstruate at about the same age as the generality of women. In some of the worst cases of painful menstruation there is neither narrowing of the canal nor the passage of membrane. The disease is a nervous one. In about two-thirds of the cases the monthly pain dates from the beginning of the function; in about one-third the patient, after menstruating for a time without pain then begins to suffer. Acquired dysmenorrhœa usually begins at an early age—in the great majority of cases before 25. It may be acquired as late as 37, and it may be acquired by women who have had children, but this is exceptional.

There are no physical signs by which spasmodic dysmenorrhœa may be recognised. The diagnosis has to be made from the character of the pain. The pain due to uterine contraction differs from the diffused continuous aching of pelvic congestion. Some patients have both pains: first, the general aching of uterine congestion, then the spasms of uterine colic. The pain of spasmodic dysmenorrhœa is far more severe than any other kind of menstrual pain. The patients often cannot lie still; they roll about with pain, it doubles them up, keeps them awake at night, makes them perspire and sometimes faint. In about one-fourth of the cases it causes vomiting. Menstrual pain of extreme severity is almost always of the spasmodic kind. This great severity is the most characteristic feature of spasmodic dysmenorrhœa. The pain of pelvic congestion is never so severe. A patient who has only this may lie down because she is more comfortable so, but if any strong reason exists why she should not lie down she can keep about. The pain of spasmodic dysmenorrhœa is of short duration. It may last only 10 minutes, but during that time it may be so severe as to make the patient vomit. It comes on suddenly; sometimes it wakes the patient in the middle of the night. Its duration is usually less than 24 hours, and it only exceptionally lasts longer than 2 days. Patients who have two kinds of pain—

the aching due to pelvic congestion, which may precede the flow by several days, and the spasms of uterine colic, which only last a few hours—may not differentiate their pains, but say simply that their pain begins so many days before the flow appears. Hence before concluding from its duration that the pain is not spasmodic, its kind must be ascertained. The uterine contractions which caused the pain of spasmodic dysmenorrhœa are intermittent. Hence the pain comes in sudden, sharp pangs, and between these there is either no pain or a dull, general pelvic aching. Each attack of pain is of short duration, usually only a minute or two. Often patients whose only pain is that due to pelvic congestion, will say that the pain is not constant, but comes and goes; and only on a closer questioning is it elicited that these attacks of pain last 2 or 3 hours at a time, and are not sudden and brief like uterine colic. The pain of spasmodic dysmenorrhœa is not relieved by lying down. In the worst cases the patients say they cannot lie down, or if they lie down they cannot lie still. They roll about with the pain. This helps in distinguishing the pain of uterine colic from that of pelvic congestion. The continuous aching of the latter is lessened by recumbency and by lying still. But these statements though true of most cases, apply not to all. Some patients with uterine spasm think they are better when lying down. Some have both pain from pelvic congestion and spasmodic pain, and then they will be more comfortable when recumbent. Although the pain of pelvic congestion is relieved, it is not always removed, when the patient lies down. Hence the two kinds of pain cannot always be differentiated by this sign alone. In exceptional cases it seems as if the spasm were tonic; the patient complains of severe continuous pain; and is cured by dilatation of the cervix. Spasmodic dysmenorrhœa has no tendency to spontaneous cure, it may last the whole menstrual life. In cases of exceptional severity it may grow worse. Pregnancy is the natural cure of spasmodic dysmenorrhœa. But the disease

is often accompanied by sterility, which may be cured by the dilatation. In about one-third of the writer's patients who were married and sterile the cure of the dysmenorrhœa was followed by pregnancy.

The best drugs for the relief of uterine colic are antipyrin and phenacetin. In slight cases these give adequate relief. If they fail, powerful narcotics, such as morphine or chloroform, will relieve the pain. But it is bad for a young woman to use these drugs every month; if this is necessary local treatment which will remove the pain is preferable. In a few cases the writer has found that 10 gr. of guaiacum resin in a tablespoonful of malt extract, twice or thrice daily, beginning a week before menstruation is expected removes the pain. The local treatment of spasmodic dysmenorrhœa is to dilate the cervix. This is best done by the passage of bougies. In most cases the cervical canal will admit a No. 6 bougie easily. A little resistance is usually met with when about No. 9 is reached. When a bougie has been passed which entered with difficulty and fits tightly, after it has remained two or three minutes in the canal it will be loosely held and a size larger can be passed. The writer generally continues the dilatation until the bougie meets with considerable resistance. This usually begins with the passage of No. 12 or thereabouts. The passage of only a No. 8 bougie, in a case of spasmodic dysmenorrhœa and sterility, has been followed by pregnancy. Before the introduction of dilatation as a means of treatment it was known that occasionally menstruation could be prevented from being painful by the passage of the uterine sound shortly before its occurrence. Hence extensive dilatation is not always necessary. The enlargement of the canal that dilatation produces lasts for some months. In at least two-thirds of the cases benefit follows. No relief followed in one-third of the cases dilated, but this does not imply that one-third of the cases of spasmodic dysmenorrhœa is incurable; it is partly accounted for by the fact that in some of the cases the

dysmenorrhœa was not spasmodic. Some cases are not cured even by pregnancy. To say that cure follows in three-fourths of cases, is within the truth. In primary cases (beginning with menstruation) the proportion of cures was larger than in secondary cases. The cure may be permanent. In some the pain returns, and is again removed by a further dilatation. If all other treatment fail and the dysmenorrhœa is so severe as to wreck the patient's life, as, for instance, by preventing her from earning a livelihood, it can be cured by removing the ovaries.

Rupture of the Vagina during Labour: Sloughing of the Intestine: Ileo-Vaginal Fistula.—John Phillips, M.A., M.D., F.R.C.P., and F. F. Burghard, M.S., F.R.C.S. (*Jour. of Obst. and Gynecol.*, May, p. 518).—A multipara, aged 34, was confined 16 months before admission to hospital. After the birth of the child there was considerable post-partum hæmorrhage, and as the patient had always had adherent placenta in her previous labours the hand was inserted to extract the placenta. But on passing it into the vagina the posterior wall was found extensively lacerated, and it entered the peritoneal cavity posterior to the uterus. The placenta was removed after some difficulty and the bleeding ceased, but on withdrawal of the hand a coil of small intestine, some 18 inches in length, was found protruding into the vagina, and the mesentery belonging to it torn away. The patient seemed fairly well. No attempt was made to replace the damaged intestine, but 3 days later the coil sloughed, and subsequently all motions were passed through the vagina. Ten weeks after labour she passed motions per rectum, and ever since fluid fecal matter was passed per vaginam. At intervals of a day or two there were gushes from the vagina of straw-coloured fluid, sometimes as much as a pint. Before the pregnancy menstruation had been regular, but

since the labour there had been 16 months' amenorrhœa. The reasons for seeking advice was loss of flesh, abdominal pain, passage of fluid and fæces by the vagina, and soreness and discomfort of the vulva produced by the latter.

For examination anæsthesia was necessary owing to the excoriated condition of the external genitalia. The vulva was red and superficially ulcerated; the nymphæ were smooth, projecting and indurated. The vagina contained some flaky, yellow, clear inodorous fluid, but no fæcal matter. The patient stated that 'motions' had not been passed per vaginam for about 14 days. On passing the finger high into the posterior fornix this was found to be continued upwards in the form of a conical cul-de-sac about 2 in. deep. The sound passed easily into it 5 to 6 in., and its point could be felt superficially beneath the abdominal parietes and in the median line. Immediately in front of this cul-de-sac was felt a superficial dimple, the external os uteri, through which the sound passed $2\frac{1}{2}$ inches directly forward. The uterus was mopped out with difficulty, and was not mobile. Extending along the upper two-thirds of the posterior vaginal wall was a hard, raised, unyielding linear scar. No communication could be made out between the sinus and the rectum. It was thought that the torn ends of the small intestine were probably widely separated, and opened into a fæcal cavity communicating below with the fistula and roofed in by intestines matted together by perimetric adhesions. To ascertain the nature of the fluid which escaped from the sinus an india-rubber drainage-tube was pushed up into the cul-de-sac and fixed there by gauze packing. The fluid proved to be pancreatic in origin. No attempt to heal the fistula by a plastic operation per vaginam was made; first, because of its entire inaccessibility; and, second, because of the dissolving effect the discharge would probably have upon newly sutured tissues.

The abdomen was opened by a median incision from the umbilicus to the pubes.

The pelvis was well raised, the intestines were packed back into the upper half of the abdomen and kept in position by a Maunsell's intestine retractor and abdominal cloths. This gave a good view of the pelvic cavity. A sound passed through the sinus per vaginam showed that the two portions of intestine communicating with the fistula were the cæcum in the immediate neighbourhood of the ileo-cæcal valve and the ileum immediately internal to it. It was therefore obvious that the portion of bowel that had sloughed originally was the final 18 inches or so of the ileum. The appendix was apparently involved in the fistula, and all the structures were densely matted together in Douglas' pouch. The small intestine, which was much hypertrophied, thrice its normal size, was first detached down to the fistula, a clamp placed upon it, and the bowel cut across with scissors as near to the fistulous opening as possible, and the open end immediately seized by an assistant, covered with an abdominal cloth, and brought up out of the wound. A large abdominal cloth was then packed into Douglas' pouch, the detached small intestine was packed off with others, and its open end invaginated and closed by a double layer of sutures—the deep one taking up all the coats of the bowel, the superficial one the serous and muscular surfaces only. Both sutures were continuous and of fine silk. The closed end of the small intestine was then covered with an abdominal cloth, the cloths removed from the pelvis, and the cæcum treated in a similar manner, being dissected down to the fistulous opening, its lumen closed by a clamp above it, and a portion involved in the fistula dissected right up and cut away from the fistulous opening with the appendix, which actually communicated with the fistula. It was then seen that the two portions of bowel led first into a cavity about the size of a hen's egg, which discharged below into the vagina. The communication with the cæcum was comparatively large, and explained the facility with which formed motions were passed per rectum. After

the cæcum had been dissected up, it was cut across near its junction with the ascending colon, so that the entire cæcum, and appendix, were removed. The open end of the ascending colon was then rapidly invaginated and sutured in a manner similar to the small intestine. The closed end was then packed off with an abdominal cloth, whilst attempts were made to clean the pelvic cavity, which had been unavoidably fouled by the intestinal contents during the dissection, and to remove the fibrous tissue forming the fistula. The vaginal opening was freely enlarged so as to permit of drainage, and a tube surrounded by gauze was passed from the bottom of Douglas' pouch, emerging through the vagina.

When the pelvic cavity had been cleaned as far as possible the invaginated ends of the large and small intestines were brought together and approximated by lateral anastomosis, in such a manner as to ensure that the direction of the peristalsis was the same in the two portions. The pelvis was finally flushed out with normal saline solution and the wound closed without a drainage-tube. The vagina was lightly packed below the drainage-tube with cyanide gauze. Recovery followed.

As was anticipated, the parts were matted in Douglas' pouch in an inextricable manner. Although it was easy to separate the bowel ends it was impossible to avoid some extravasation of their contents. Owing to the patient's collapsed condition the complete excision of the fistulous track could not be performed.

The causes of ileo-vaginal fistula are: (1) strangulation of the prolapsed intestine at the site of rupture; (2) tearing away of the mesentery of the prolapsed portion, with inevitable subsequent sloughing; (3) ulceration of the intestino-vaginal wall, the result of gangrene; (4) breaking down of a cancerous growth involving intestine and vagina. In puerperal cases the sequence appears to be: (a) rupture of the vaginal walls from precipitate labour or traumatism; (b) hernia of intestine; (c) its

strangulation and subsequent separation; (d) perimetric inflammation and formation of protective adhesions; (e) passage of faecal material per vaginam for a considerable period; (f) escape of intestinal juice. Cauterization of the fistula edges has proved successful in only 2 cases. Direct paring and suture have succeeded in a few instances, but obviously with a fistula in such an inaccessible situation the only method likely to result in cure is opening the abdomen and suturing the severed ends of the intestine. This case appears to be the first successful one recorded. It presents many points of obstetric interest. The uterus was obviously uninjured, but the tear was through the posterior fornix. The gushes of fluid were due to the retentive power of the upper half of the vagina and the continual trickling of the intestinal fluid into it. The laceration must have been the result of the precipitate labour, but it is difficult to explain the separation of the mesentery from the prolapsed bowel.

Expulsion of Ovarian Cyst per Vaginam during Labour.—F. W. N. Haultain, M.D., F.R.C.P.E. (*Jour. of Obst. and Gynecol.*, April, p. 384).—A woman, aged 32, 3-para, was admitted to hospital. She had been in labour for 24 hours, and the membranes had been ruptured 12 hours previously. The delay in delivery was due to a soft swelling bulging through the posterior vaginal wall. An attempt at delivery with forceps had been made, with the result that a mass had protruded from the vulva, and was pushed back into the vagina. Labour-pains had entirely ceased. On introducing the whole hand into the vagina the mass appeared to lie in the canal, and on being grasped to pull down for inspection it became detached and was removed. On casual examination it presented the dark red appearance and softness of an œdematous polypus about the size of a small cocoa-nut. As the woman had already been so long in labour forceps were immediately applied to the engaged foetal head, and

a living male child was easily delivered. As free manipulations had been made it was decided to wash out the genital tract. On introducing the fingers to guide the nozzle of the syringe they passed through a rent in the posterior vaginal wall. Suspicions were aroused that the tumour might have been extra-vaginal and burst through the tear. The tumour was more carefully examined and incised, when it was found to be a dermoid cyst containing hair and much sebaceous material. The rent in the vagina was packed with a strip of iodoform gauze about 2 inches wide and 4 feet in length, and the vagina douched with antiseptic solution. Recovery was uninterrupted. The after-treatment consisted in daily dragging out about a foot of the gauze till it was entirely removed on the fourth day.

Four similar cases are recorded; 3 of these are tabulated by Playfair in a paper read before the London Obst. Soc. In all forceps were used. Four of the 5 mothers recovered, but all the children were born dead. Six cases are recorded of expulsion of ovarian tumours *per anum* during labour; of which 4 were fatal, in 1 the expulsion was completed by unaided uterine action. If labour be left to the spontaneous efforts of nature there is a maternal mortality of 50 per cent. Hence prompt and energetic treatment should be adopted. The recognised methods are:

1. Postural reposition of tumour into abdomen.
2. Artificial delivery *per vias naturales*:
 - (a) Without diminishing size of tumour.
 - (b) After diminishing size of tumour.
3. Cæsarean section and ovariectomy.
4. Vaginal ovariectomy.

Forcible delivery by dragging the child past the obstruction is so dangerous that it should never be attempted. Reposition involves slighter risks, and was the principal mode of treatment adopted before operations were so readily undertaken as they are now. The results obtained by reposition and simple disintegration offer almost equal success—viz., a maternal mortality of about 12 per cent. which is far beyond what may be

expected from the operative methods now available. The cause of death under both these methods of treatment usually is peritonitis from injury to the tumour by pressure, twisting, or tearing. Thus the early removal of the tumour should be attempted. This result may best be attained by vaginal ovariectomy before delivery or by ovariectomy as soon as possible after delivery, after reposition or disintegration of the growth before expulsion of the child. Vaginal ovariectomy has been performed thrice without a fatality. This result, taken in conjunction with the extraordinary successful termination of cases in which the tumour is spontaneously expelled, strongly supports the method. Further, should an attempt at extirpation during labour be unsuccessful, the condition of the patient is no worse than if mere disintegration had been employed, as the tumour may subsequently be removed *per vaginam* or abdominally. The writer thinks that vaginal ovariectomy is a safe, and at the same time a ready, method of treatment. In these cases the tumour, to be intrapelvic must be small, and, being pushed down in front of the advancing child, can be comparatively easily reached, while the incision through the vaginal wall is the same as that required for simple disintegration. From every point of view the operation commends itself as the one to be employed by the isolated general practitioner, as its efficient performance requires a small armamentarium compared with that necessary for laparotomy. After ligation of the pedicle and removal of the tumour the writer would stitch up the vaginal wound before attempting delivery, so as to avoid further tearing of the vaginal wound during the passage of the child; but should uterine contractions expel the child before suturing can be done, packing and draining with sterilized gauze alone may be adopted, as in the case now described.

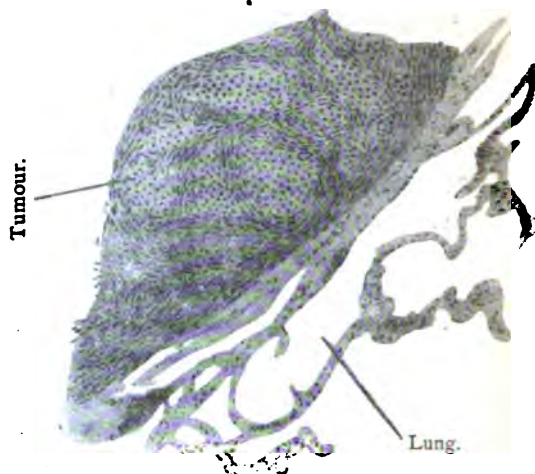
Abdominal ovariectomy within 24 hours of delivery has been performed on several occasions with unflinching success, and there seems no reason to suppose that it would be more dangerous.

during the puerperium than usual. When the high mortality of 12 per cent. after simple reposition is considered, ovariectomy appears justifiable after reposition whenever circumstances admit of its being properly performed, as the necessary operation is only anticipated by a few weeks and the immediate risks of a possibly injured tumour are avoided. After free disintegration of the tumour during labour, if it cannot be removed per vaginam, laparotomy should always be performed as soon as conveniently possible.

Cavernous Uterine Myoma with Metastatic Growths.—F. Schlagenhauser (*Wien. Klin. Woch.*, May 15, p. 523).

—A married woman, aged 58, was admitted to hospital on May 11, 1898. She had had anorexia, dyspnoea, and cough with some expectoration for a year. During the last 4 weeks she had noticed an abdominal swelling. The circumference of the abdomen just above the umbilicus was 34½ in. There was dulness in the flanks. In the right hypogastric region was a firm tumour of the size of a fist. In the anterior fornix were two movable tumours of the size of walnuts. On May 14 laparotomy was performed. The peritoneal cavity contained blood-stained serum. A pedunculated subperitoneal tumour of the uterus was ligatured and removed. Another tumour of the size of 2 fists, which projected into the right side of the pelvis, was not touched. The peritoneum was covered with miliary nodules. The abdominal wound was closed, and death occurred on June 1. The tumour removed from the uterus was a myo-fibroma.

NECROPSY.—The large pelvic tumour was connected with the posterior wall of the uterus, and was continued as a hard, nodular, cylindrical cord into the lower end of the capsule of the right kidney. Near the insertion of the right Fallopian tube was a second smaller tumour of the size of an apple. This was covered with numerous smaller nodules. The pleuræ on both sides were thickened and adherent. In the right



Section of secondary growth in the lung.

lung were 3 tough nodules, the largest of the size of a cherry stone. They were greyish-white, fibrous, and easily enucleated. A similar nodule was found in the left lung. The liver had undergone fatty degeneration; in the posterior part of the right lobe were 3 tumours of the size of apples, and in the left lobe were several others of the size of hazel-nuts. Their outline was sharply defined. The tumours in the lungs and liver were such typical myomata that they were recognised as such macroscopically. The pleural changes and the miliary nodules on the peritoneum were tuberculous. The largest tumour which grew diffusely from the substance of the uterus was a fibro-myoma. In parts, however, it consisted entirely of smooth muscular fibres, among which were numerous blood-spaces (*myoma telangiectodes*). The other uterine tumour was a fibro-myoma. The metastatic tumours of the lungs and liver were pure myomata, which in parts contained numerous blood-vessels, but were nowhere cavernous (Fig.). The pulmonary tumours were imbedded in tuberculous tissue.

It is not generally recognised that simple myomata may possess malignancy apart from undergoing malignant degeneration, but 5 undoubted cases, besides the writer's, have been reported.

NOTES.

THE NATURAL HISTORY OF DISEASE ; THE BASIS OF TREATMENT.—At the Annual Meeting of the British Medical Association, Sir Thomas Barlow delivered an interesting "Address in Medicine." Taking a wide survey of recent progress he supported the thesis that advances in therapeutics have been satisfactory in proportion as they have been harmonious with complete knowledge of the natural history of disease. Good treatment does not owe its origin entirely to pathology—it has often preceded pathology—but in proportion as pathology has become complete it has rationalised and refined treatment, separating the ephemeral from the permanent, the accidental from the essential, the harmful from the beneficent. Recently pathology has suggested new therapeutic methods, which experience has justified. Within a short period bacteriology has profoundly changed our knowledge of and treatment of diphtheria. Only a dozen years ago there were endless disputes as to the difference between croup and diphtheria ; as to whether there was a true membranous croup different from laryngeal diphtheria ; and the diagnostic signs of diphtheria appeared to elude the most careful anatomical definition. Malignant diphtheria of the throat was easy to diagnose, but the nomenclature of mild cases simulating follicular tonsillitis and of the throat exudations complicating scarlet fever was unsettled. Only at length by studying

cases in epidemic groups and especially by noting the paralytic sequelæ was it learned how widespread was the disease, and that it included cases with no visible membrane though there might be exudation in the post-nasal region and, for a time, thin irritating discharge from the nostrils. Exceedingly diverse were the opinions as to its etiology. We were never prepared to deny that exposure to cold and drains were causes. Drain-poisoning, serious as it is in lowering vital resistance and preparing a suitable soil, has often been made to bear more than its fair share in the immediate causation of specific disease, and diphtheria was a notable example. Not many years ago membranous croup was treated in children's hospitals in ordinary wards, and some maintained that it was not contagious. The further study of epidemics led to the proof that the disease was sometimes disseminated by milk. Then came the observation that epidemics were often followed by sporadic cases, or preceded for a time by mild and ambiguous sore throats. By degrees, even in apparently sporadic cases, more and more importance was attributed to insidious personal contagion, and it was seen that the disease was maintained and transmitted by the moving to and fro of slight cases, especially in schools and places where children were congregated. Increase of the disease seemed to correspond with the period

when compulsory school attendance was enforced, and there grew up a strong presumption of the tenacity of infective material in bedding and clothing.

The methods of treatment were varied. The routine administration of antimonials and emetics in laryngeal cases held sway so long probably on account of confusion of diagnosis. The cases that were benefited were those of simple laryngeal and tracheal catarrh with spasm, but true membranous cases were probably made worse. The consensus of opinion in favour of quinine and iron and other tonic methods grew slowly. The local applications were multiform. The steam-kettle and the tent and the irritating and headache-producing antiseptic inhalations often lowered the strength of the patient while the local disease was vainly attacked. The fear of cold air in the treatment of laryngeal affections was also maintained in respect to faucial diphtheria and a room temperature over 70° day and night, moist like a tropical hot-house, was constantly prescribed.

When the bacillus of diphtheria was isolated by Klebs and the inoculation of it in animals was demonstrated by Löffler to produce diphtheritic lesions the first step had been taken in unravelling the skein. These discoveries and those of Klein, Roux, Sidney Martin, and others, illustrated and explain the puzzling clinical facts. First, the polymorphism of the bacillus is very suggestive. The long and the short varieties may occur as pure cultures or side by side, or in successive cultures one form may apparently be replaced by the other. Though these varieties cannot yet be correlated to different types of membrane, yet their discovery prepares us for

considerable variation in naked-eye characters. Secondly, the variation in virulence of the bacilli down to zero with little morphological alteration has its transcript in clinical experience. When in an ordinary case of faucial diphtheria the nose becomes affected and a thin ichorous discharge appears at the nostrils the gravity of the case is increased. On the other hand, there are cases of children attacked with thin fibrinous exudation obstructing the nostrils in which the bacillus has been identified and yet there is little constitutional disturbance and apparently slight infectivity. There is a form of chronic diphtheritic ophthalmia with thick exudation which presents many similar features. Thirdly, the detection of the diphtheria bacillus in the secretions of the throat in cases at first clinically indistinguishable from follicular tonsillitis gives the clue to the puzzling cases which the study of epidemic groups had revealed—namely, that paralytic sequelæ can occur when careful observation has failed to show any antecedent visible membrane. The persistence, sometimes for months, of the bacillus in the fauces of those who have passed through an attack of diphtheria when all membrane has long since disappeared gives the clue to the occasional prolonged infectiousness of patients. In day-school epidemics a slight nasal discharge associated with imperfect resolution of the lymphatic glands are danger signals which suggest bacteriological investigation for continued sources of dissemination.

The detection of the diphtheria bacillus without exudation in the fauces of medical men and nurses attending cases of the disease emphasises the importance of keeping the mouth and throat clean and of maintaining the vital resistance by good food, regular

sleep, and plenty of fresh air. In the old days the risks of the nurse contracting diphtheria were often increased by the close, stuffy, sick-room, the long periods of attendance, and the inadequate meals. The tenacity of the bacillus and the fact that cultures can be made from membrane that has been in contact with a textile fabric even after some months show the importance of destroying or thoroughly disinfecting contaminated clothes. Bacteriologists have solved some clinical difficulties by demonstrating that not all false membranes are diphtherial. The streptococci, for example, seem capable of producing membrane. The exudation occasionally present in early scarlatinal throats, which are extremely red and swollen, generally is not true diphtheria. This harmonises with the facts that the exudation seldom spreads and that paralysis does not supervene. On the other hand, the secondary exudations which sometimes supervene in measles and in the late stage of typhoid fever often appear to be due to true diphtheria bacilli.

The skein is still further unravelled by the discoveries of Roux, Yersin, and Sidney Martin on the toxin of diphtheria. The first two observers separated the toxin from the bacilli and produced by inoculation many of the symptoms of the disease but without the formation of false membrane. For the most part the toxin is elaborated at the site of the membrane, and not to any great extent by multiplication of the bacilli in the blood and tissues. This leads to the justification of the researches of Behring and others which resulted in the use of antitoxin. Statistics show a reduction of mortality between one-third and one-half. Seek the assistance of the bacteriologist in every doubtful case, but do not wait for his report, for certainty of success

depends on the remedy being introduced early, say within the first 3 days.

In speaking of suppression of urine, Sir Thomas Barlow by way of parenthesis referred to a practical point in nursing—namely, the difficulty of inducing nurses to give abundant plain water in diphtheria and other febrile illnesses generally, and also to the importance of aiding renal secretion and quenching thirst when there is distressing vomiting by weak saline rectal injections. As to the incidence of diphtherial paralysis in cases treated by antitoxin, it is reasonable to suppose that many who develop paralysis after antitoxin would otherwise have died before the paralysis could have become manifest. Goodall has shown that there are more fatal cases of paralysis in those treated by antitoxin than in those not treated. The prophylactic value of antitoxin for the members of a family or institution in which there is a case of diphtheria has been proved, but the period of immunity conferred does not exceed 3 weeks.

While the antitoxin treatment of diphtheria is the most satisfactory of all the serum methods the others are full of suggestion. Thus, with regard to the tetanus antitoxin, although the experiments on animals have not furnished a successful method of dealing with the severe and acute cases of human tetanus, yet some benefit has been gained in the chronic forms. The tenacity of the combination between the toxin and the nervous tissues which was foreshadowed in diphtheria is in tetanus the dominant factor. The toxin appears to have a special affinity for the tissues of the central nervous system. Later investigations point to the necessity of injections into the cerebral substance itself, as well as into the cellular tissue, and to the

employment of larger doses. We are still ignorant as to the microbe of rabies which, we are none the less convinced, is the cause of the disease. But the knowledge that the poison is lodged in the cerebro-spinal tissues has led Pasteur and his pupils to fruitful results. The working hypothesis that in the dried spinal cord of an animal that has died from rabies the microbes are destroyed, but that the immunising substances remain active, seems to have been justified. The prophylactic value of Pasteur's methods in those bitten by rabid animals is undoubted, although no beneficial effects follow their employment in the developed disease. But when a complete analysis of the life history of the organism has been attained we may fairly look for better results. The same may be true with respect to the great triumph of English protective medicine, vaccination. The most recent methods of preparation of vaccine with the carefully regulated glycerination and the eliminating of so much of the secondary infection, for which we are indebted to Copeman, mark an enormous advance.

With respect to anti-streptococcic serum there is the most varied testimony. Some cases of erysipelas and puerperal fever and some of those most desperate cases of septic infection from necropsies, have been strikingly benefited. Some cases of infective endocarditis appear to have improved, but many others have not. Although the streptococcus is the organism of many forms of septic æmia, and although morphologically no differences can be established according to the lesion from which it is derived, yet there appear to be many different strains, and the serum of an animal that has been immunised from one strain will not necessarily prove beneficial to an animal infected by another strain. Mean-

while in any case of severe septicæmia, when there is reason to doubt whether the patient can cope with the disease, we are not justified in withholding anti-streptococcic serum, which should be recently prepared.

The most important pathological fact bearing on the therapeutics of tuberculosis is the enormous frequency of unsuspected tubercle. Necropsies on those who have died from injury and every form of acute and chronic disease often show one or more old tuberculous lesions. And the younger the subject the more frequently are they found. About one-third of the children under 2 who die from all causes in the children's hospitals have tuberculous lesions. This shows the enormous frequency of unsuspected tuberculosis, the tendency to spontaneous arrest, and the frequency of local as compared with general tuberculosis. Recent sanatorium experience has shown the value of hyperaëration and of establishing tolerance to cold and to exposure to variations of temperature. The value of hyperaëration is not summed up in its affording more effective oxygenation to the lungs, parts of which are *hors de combat*, though that counts for a great deal. The access of free air is a natural and wholesome stimulus to the nervous system. It increases the appetite and lessens the languor and exhaustion of a chronic febrile disease, for which the still warm air of the old sick-room did nothing. The removing of the liability to catarrh of the upper air passages by free exposure to pure fresh air had been known in other diseases than phthisis. But had we only had the sense to apply it, the enormous difference between sitting in the open and sitting in a draught was well-known. The daily exposure to free, cool air has also been shown to lessen pyrexia, diminish sweat-

ing, and improve sleep. Can we exaggerate the value of the great intake of sunshine which this treatment insures. With regard to exercise sanatorium experience has shown that the most important indications depend on the careful record of temperature. The fastidiousness as to food, which is so hard to deal with in phthisis is less difficult under sanatorium treatment than under ordinary conditions. Few patients cannot assimilate milk. The enforcement of large mixed meals, at any rate for a period, is on the whole justified by the results.

We should speak more guardedly of the cure of consumption and insist rather upon its arrest. Prolonged after-care of the patient is necessary. Here again bacteriology has given emphasis and direction to rational therapeutics, for many patients, in spite of increasing greatly in weight and general nutrition and improving enormously in physical signs, nevertheless continue after their sanatorium course to expectorate once a day sputum containing tubercle bacilli. Even in the most promising cases the possibility of relapse cannot be excluded. We must continually hark back upon the old text of maintaining the resistance at its maximum. Systematic arrangements should be made for open-air occupation. Whether this can best be done in colonies like the epileptic ones, where horticulture is taught, or by some method comparable to boarding out, requires much consideration. To meet the full needs of the poor there ought to be some form of special hospital provision for incurable and rapidly advancing cases. These are certainly not suitable for the sanatorium.

The most important predisposing conditions to tuberculosis in the children of the poor

are measles and whooping cough and the close, stuffy rooms in which they are treated and in which their convalescence takes place. The response of children to open-air treatment is, if anything, more striking than that of adults. The importance to healthy children of passing a great part of the day in the open air has been gradually appreciated, but how large a portion of every 24 hours of a child's life is passed in the bedroom is not yet realised. The traditional fear of night air and of wide-open windows, which is perhaps the survival of ancient malarial experience, has still to be unlearned.

THE EARLY DIAGNOSIS OF CANCER OF THE UTERUS.—In the "Address in Obstetrics" Professor Sinclair pointed out the importance of early diagnosis of cancer of the uterus. No practitioner should have difficulty in diagnosing cancer of the uterus when a cavity has formed or the patient is suffering from one of the hypertrophic forms of epithelioma of the cervix. But there are cases in which early diagnosis is difficult. It is easy to place too great reliance on mere microscopic diagnosis. It is, for example, impossible to diagnose thereby between benign adenoma of the corpus uteri and the malignant form of the disease: the distinction is purely clinical. The finer clinical points are constantly overlooked because of the air of scientific accuracy which the masters of the microtome assume. Friable tissue in the cervix uteri indicates malignant disease whatever the microscopic may say. By early diagnosis it should not be difficult to bring the proportion of operable cases seen in this country to something approaching that of Germany. Dr. Munro Kerr found that at the Western Infirmary, Glasgow, only 18 per cent. of the cases were operable. German gynaecologists

have succeeded in raising the proportion of operable cases from this figure to over 30 per cent., and now in some clinics, such as Olshausen's, to 50 per cent.; and Schuchardt has reached the extraordinary figure of 61 per cent.

EAR DISEASE IN SCHOOL CHILDREN.—The report on the condition of the ears of 1000 children in the Hanwell Schools which Mr. A. H. Cheatle has presented to the Otological Society discloses a prevalence of disease which, in his own words, is "little less than appalling." These children live under practically perfect hygienic conditions, but they are drawn from the poorest class of the population of London. The latter fact is, no doubt, of considerable importance. Using the term "normal" to mean that the membranes appeared normal, and that the whispered voice could be heard at a distance of 18 feet, he found that 520 out of the 1000 children were unable to pass the test. Many of these, especially in the group of depressed membrane associated with adenoids, had not been noticed by their teachers to be deaf. This point is important, for if such children are to be saved from deaf-

ness childhood is the time for treatment. Mr. Cheatle considers that all children, whatever their station in life, should be thoroughly examined at the age when they can give intelligent and trustworthy answers to simple tests, unless anything amiss in the hearing is noticed earlier. The comparatively large number of cases of foreign bodies in the ears (18) is noteworthy. The children were all unconscious of their presence. The association of depressed membranes with deafness and adenoids was well marked; in 141 out of 166 cases there were adenoids. Of the 1000 children examined 335 were, or had been, the subjects of discharge from one or both ears; 88 of these might be spoken of as walking on the edge of a precipice and 6 as at least half over. In 71 of the 88 cases in which suppuration was present there were adenoids and in 13 there was granulation tissue in the ear. The association of adenoids with ear disease was most marked; they were present in 434 children, of whom 394 presented some aural troubles. Mr. Cheatle thinks that the system in vogue in the majority of the large cities in Germany, *i.e.* appointing physicians to the schools to examine especially the eyes and ears, should be introduced into this country.

LEADING ARTICLES.

LANCET, Aug. 2, p. 280.

The Simulation of Acute Peritonitis by Pleuro-Pneumonic Diseases.

By H. L. BARNARD, M.S., F.R.C.S.

In certain cases it is easy to mistake thoracic for abdominal disease. The fact was well known to the older physicians, but has dropped out of notice in recent years. The subject is important, for mistaken diagnosis is often followed by unnecessary operation. The following cases were observed in the London hospital:—

CASE 1.—*Right diaphragmatic pleurisy and pneumonia with marked abdominal signs, simulating appendicitis with peritonitis.*—A girl, aged 11, was admitted to a medical ward in 1895 complaining of pain in the head, but especially in the abdomen. Three days before she had severe pain down the right side of the abdomen and several times vomited bilious fluid.

The abdomen was rigid and especially tender in the right iliac fossa. The bowels had not acted for 3 days and the tongue was brown and dry. The pulse was 104 and full, and the temperature 103°. The thoracic signs—which were never marked, were almost absent on admission; she was, however, breathing 40 and cut the respirations short because they hurt her in a manner characteristic of pleurisy. She had, moreover, tenderness along the attachment of the diaphragm, where the veins were dilated. On the fourth day after admission there were obscure signs of pneumonia at the right base. The temperature which had remained at about 103° fell by crisis to normal. But it soon became irregu-

lar and for 4 or 5 weeks frequently reached 102°. The signs of pneumonia and diaphragmatic pleurisy became distinct, but had she been admitted to a surgical ward, at the present time, when so many cases of appendicitis are submitted to early operation, her abdomen would probably have been explored.

CASE 2.—*Pleuro-pneumonia of the right base; acute abdominal pain and vomiting; no lung signs; herpes labialis; empyema.*—A boy, aged 10, was admitted in 1899 as suffering from acute peritonitis after an injury. Two days before he had received a blow in the lower chest or in the upper abdomen. Next day he was seized with severe pain in the abdomen, chiefly in the upper part, and he vomited twice.

The abdomen was somewhat distended, tender, and rigid all over, but especially so in the epigastric region. The bowels had been constipated since the pain commenced and an enema only gave a slight result. He lay with the legs drawn up. The temperature was 99.5° on admission but it rose to 103° in the evening. The pulse ranged from 130 to 140 but was of good volume and strength. The respirations were 44 and catchy. Examination of the thorax gave negative results. He developed herpes labialis and was transferred to the medical side. Next day there was undoubted consolidation at the right base. The temperature fell by crisis on the ninth day of the disease but 7 days later it rose again and became irregular. Right empyema developed.

CASE 3.—*Double basal pneumonia with right diaphragmatic pleurisy in a girl the subject of a gastric ulcer; acute epigastric pain with collapse;*

laparotomy.—A girl, aged 17, had been an out-patient for some months for marked anæmia and gastric ulcer. She had had once before a similar attack to the one about to be described. One morning in 1899 while going to work she was seized in the street with violent epigastric pain and vomiting. She was brought to the hospital in a state of collapse. The pulse was 120 and very thready and the temperature 104.5°. The abdomen was rigid, motionless, very tender, and distended, and these signs were most marked in the epigastric region. She was admitted to the surgical wards as a case of ruptured gastric ulcer and within 2 hours Mr. Eve opened the abdomen. He could find no trace of gastric ulcer. On the third day there were signs of right basal pneumonia. Death occurred on the fifth day.

The necropsy showed double basal pneumonia and right diaphragmatic pleurisy. In the stomach was a shallow ulcer of the size of a sixpence. There was no peritonitis.

Correct diagnosis was impossible. The only point which should have aroused suspicion was the temperature of 104.5°. The frequency of respiration was not recorded.

CASE 4.—*Pyopneumothorax of the left base simulating appendicular peritonitis or left sub-phrenic abscess of gastric origin*.—A man, aged 34, was admitted in 1901, under a physician for "colic and peritonitis." The writer was asked to give a surgical opinion on his abdominal condition. The patient had not been well for a year, suffering chiefly from pain and wind in the stomach after food. For several weeks he had also had pain in the left lower and back part of the chest with a bad cough and night sweats and wasting. He had been constipated for 12 days.

The temperature was 101°, the pulse was 100 and fairly strong, and the respirations were 38, the nares being vigorously dilated at

each inspiration. He was slightly icteric. The abdomen was rigid and very tender all over, but there was no local dullness or resistance and the abdominal wall relaxed between the respirations. The base of the left lung behind was dull. Vocal resonance and vocal fremitus were diminished. Such breath sounds as could be heard were somewhat tubular.

Disease above the diaphragm and arising from the lower lobe of the left lung was diagnosed. Ten days later there was pyopneumothorax at the left base.

CASE 5.—*Pyopneumothorax of the right base simulating appendicular peritonitis*.—A man was said by the house surgeon to be suffering from "appendicitis and general peritonitis."

He was seriously ill and in great pain. The temperature was 100°, the pulse was 80, the respirations were 43, and the tongue was furred and dry. The abdomen was hard, rigid, and tender all over, but perhaps a little more so in the right iliac fossa. It relaxed, however, between the respirations. Examination of the lungs showed only a little bronchitis and emphysema. The writer refused to operate because whilst the abdominal signs appeared at least doubtful the respirations—43 a minute, with a pulse of only 80—appeared to indicate that the lungs were the source of the trouble. Next day the abdominal signs had almost disappeared and there were signs of right basal pleurisy. Empyema followed.

CASE 6. — *Traumatic left pleurisy with abdominal signs*.—A man, aged 38, was admitted in Feb., 1901. He had been struck over the left lower ribs by a plank hanging from a crane. There was fracture of two of the left lower ribs. Within 12 hours of admission a pleuritic rub was heard. Next day he complained of violent abdominal pain which was worse on the left side. The

abdomen was rigid all over but especially in the left hypochondrium and lumbar regions; the abdominal wall, however, moved on respiration. Ill-defined dulness was found down the left side and was thought to be due to blood in the peritoneum. He vomited continuously. The bowels had not acted since admission and an enema of one and a half pints of soap-and-water was retained. There was retention of urine. The temperature was 99° and the pulse 75 and of good volume. Laceration of the spleen with recurrent hæmorrhage was diagnosed. The abdomen was opened in the left linea semilunaris and the contents were found to be normal. The dulness was explained by the enormous muscular development of the abdominal wall, which was so great that the recti and lateral abdominal masses projected into the peritoneum as rounded masses. Recovery was uninterrupted.

Andral appears to have recognised the simulation of abdominal by thoracic disease in 1835 and in his book narrates several typical cases. Watson describes cases of pleurisy at the right base, simulating hepatitis, but he does not appear to have recognised the possibility of confusing diaphragmatic pleurisy with acute peritonitis. Fagge says: "In exceptional cases the pain is referred to the terminal branches of the intercostal nerves; to the hypochondrium, so as to lead to a mistaken diagnosis of hepatitis; to the loins, so that the case has been called one of lumbago; or to the neighbourhood of the umbilicus, so that peritonitis has been suspected." Modern medical writers for the most part are vague in their reference to this subject, and many do not even refer to it at all. The condition appears to be unknown to surgeons. The thoracic diseases which can give rise to such severe

abdominal symptoms as to simulate peritonitis are all situated in the lower part of the chest, either in the base of the lung or the adjacent pleura—diaphragmatic or parietal. In 3 of the writer's cases there was pleuro-pneumonia of the base of the lung, involving the diaphragm. In 2 apparently there was a tuberculous focus in the apex of the lower lobe which ruptured into the pleural cavity, producing pyopneumothorax. In one the pleurisy was due to a contusion. The abdominal symptoms may be divided into parietal and visceral.

PARIETAL.—The abdominal wall is acutely tender and painful. The tenderness often extends over the whole abdomen, but in some cases it is unilateral; it may be present only above or below or be more intense in these situations. Acute abdominal pain and hyperæsthesia in the right hypochondrium may be attributed to hepatic disease in the right iliac region to appendicitis, and in the epigastrium to perforated gastric ulcer. The abdominal muscles are, moreover, in spasm, so that the abdominal wall is board-like. The deepest anæsthesia is necessary to relax it. The respiration is of the costal type, but on placing the hand upon the abdominal wall this relaxes for a moment at each inspiration—an important diagnostic sign. Writers on diaphragmatic pleurisy insist on the importance of exaggeration of costal respiration on the unaffected side.

VISCERAL.—The visceral signs are distributed along the whole length of the alimentary canal. Gastric disturbance leads to nausea, hiccough, and vomiting which may be urgent and become bilious. The intestines are apparently more or less paralysed, so that the abdomen becomes distended, and this, with the tenderness and spasm of the abdominal wall, produces a most deceptive resemblance

to peritonitis. Constipation is nearly always present and enemata may be retained, so that apparently the rectum has lost its irritability. Even the profound vascular changes associated with severe lesion in the splanchnic area are frequently present, at least at the onset, although they do not often persist or become more severe as the disease develops. The patient is often collapsed at the onset of the pain. The extremities are cold and beads of sweat may break out on the forehead, whilst the features are pale and pinched, but in none of the writer's cases were there rings round the eyes or the dry shrivelled tongue associated with general suppurative peritonitis.

DIAGNOSIS.—If suspicion is aroused, the diagnosis usually is easy. The chief points are the rapidity of the respiration, often 40 or more, which is out of all proportion to the pulse-rate, which is seldom so frequent as 100 and is not weak or wiry. The respirations often exhibit the catch at the end of inspiration characteristic of pleurisy. The abdominal tenderness is chiefly superficial and firm deep pressure with the flat hand may be tolerated. It will then be found that the abdominal wall becomes soft for a moment at each inspiration which does not occur in acute peritonitis. The absence of rings round the eyes and a temperature of about 103° should also make one hesitate to diagnose serious and general peritoneal infection. Examination of the suspected side of the thorax will reveal some dulness or friction sound or some diminished costal movement; but direct thoracic signs are often almost entirely lacking for 24 hours or more.

PATHOLOGY.—The pathology is one of referred pain and divides itself into 3 heads.

1. *Irritation in continuity* of the lower 6 dorsal nerves will explain the hyperæsthesia

and spasm of the abdominal wall. These nerves supply the diaphragm and lower part of the pleura, and their branches, if not their trunks, will be irritated by an acute inflammatory process. The seventh to the eleventh dorsal nerves supply the skin and muscles of the abdominal wall. If the seventh, eighth, and ninth nerves are chiefly affected, the acute epigastric tenderness and spasm will closely simulate a perforated gastric ulcer, or if chiefly hypochondriac and on the right side hepatitis or gall-bladder trouble. When the tenth dorsal nerve is mainly affected the pain is referred to the umbilicus, as it is in so many abdominal complaints, whilst the area of the tenth and eleventh dorsal nerves on the right side is that in which the signs of acute appendicitis develop. Moreover, tenderness and spasm on the left side in the tenth and eleventh dorsal areas do not exclude appendicitis, for in the early stage of this affection the pain may be referred to that side. Three of the writer's 6 cases terminated in suppuration. This seems to show that the inflammation in order to produce such abdominal signs must be severe enough to penetrate to the nerve trunks themselves and produce neuritis.

2. *Referred visceral pain* will explain referred abdominal pain from lung disease without pleurisy. The seventh, eighth, and ninth dorsal rami communicantes supply the lungs. When broncho-pneumonia, phthisis, or bronchitis but not lobar pneumonia supervene, even without pleurisy, impulses may pass up to the posterior root ganglia of these nerves and there produce such changes that normal impulses passing through these ganglia from the terminal branches of the nerves in the epigastrium and upper abdominal wall are exalted into painful impressions. The spasm follows reflexly from the pain.

3. *Of the pathology of the visceral signs* gastric, intestinal, rectal, and vascular, little is known. Perhaps they are the result of a reflex in the reverse direction to that just alluded to, so that irritation of the 6 lower intercostal nerves by pleurisy produces disturbance in the distribution of the 3 splanchnic nerves which are derived from the same level of the spinal cord. On the other hand, it may be due to irritation of these nerves in continuity as they lie beneath the pleura or pass through the diaphragm to the great sympathetic plexuses and ganglia of the abdomen.

See also "REVIEW," p. 570.

On Aug. 23 he was readmitted. The pain had diminished and was confined to the lower lumbar region. He was somewhat emaciated. There was no spinal deformity or tenderness. Widal's reaction was negative. The temperature in the first month varied between 98° and 99.5° . Then it began to rise, and on Sept. 25th reached 103.6° . The febrile period lasted 2 weeks. On Oct. 2 the spleen was felt below the ribs and Widal's reaction was obtained. In the last week in Oct. improvement began. He was discharged on Dec. 13, having still some trouble with the back. He was soon free from pain, but the back felt weak. He did not attempt to return to work in his office until May, 1900. During the summer the back felt very sore for a day or two after any mis-step or over-exertion. This symptom still persists but in less degree.

CASE 2.—A salesman, aged 32, was taken ill with typhoid on April 7, 1899. The attack was moderate and lasted 7 weeks. After the disappearance of the fever he was propped up in bed, and felt a little stitch or catch in his back. This trouble increased continuously, and within 24 hours he was unable to turn in bed, and suffered from deep, cramp-like pain in the lower lumbar region, a little more to the right than to the left. The pain came on in paroxysms, which seemed to be relieved by grasping the bed tightly. After this he was kept flat upon his back 10 days, and then was so much relieved that he was again propped up in bed. The use of the bed-rest was gradually increased, and he was allowed to dress at the end of another 10 days. He was not, however, free from pain or soreness when sitting up. There was no pyrexia. After 2 weeks the pains again began to increase, and one day when on his feet he had so severe a "cramp" that he would have fallen if he had not been sup-

BOSTON MED. AND SURG. JOUR., July 17, p. 59.

"Typhoid Spine"

By. G. W. MOOREHOUSE, M.D.

A man, aged 28, had a severe attack of typhoid fever with a relapse. At the beginning of the second week he entered hospital and he was discharged on June 10th, 1899, after a period of 10 weeks. Widal's reaction was obtained. When he sat up or walked about the back felt weak and ached. Ten days after he was discharged the pain rapidly increased and occurred in attacks lasting for an hour or two, with intervals of 3 or 4 hours of comparative relief. Movement was liable to bring on an attack but one often occurred without assignable cause. The attacks were more frequent by night than by day. The pain was localised in the lower lumbar and sacral regions and in the buttock—usually in the right, sometimes in the left, but never in both buttocks. Periods of a few days of normal temperature alternated with similar periods of pyrexia in which the temperature sometimes rose to 103° .

ported. He thereupon took to bed and for 3 or 4 days had some elevation of temperature.

On July 17 he entered hospital. He was anæmic, emaciated, and nervous. There was no deformity of the spine. Tenderness to deep pressure was found in either iliac region and over the painful area in the back. Tenderness over the spine developed later and was for a time marked. During the first month there were febrile periods of from 12 hours to 4 days, during which the temperature rose to 102.5° , 103.5° , and once to 104.7° . They alternated with rather longer periods of normal temperature. He was never free from discomfort, and at short intervals had a succession of spasms of pain lasting at intervals for a day and a night, or even 2 days. No cause could be assigned for these attacks, although any movement not executed with the greatest circumspection increased the discomfort, whether at the time he was in pain or relatively free from it. Improvement was slow. He returned to work in Jan., 1900, but did very little work for 8 or 9 months, and had an aching, weak back all the time. Any jar or mis-step would hurt his back. He could not lift anything heavy until the spring of 1901.

Gibney first described "Typhoid Spine." (*New York Med. Jour.*, 1899, vol. i., p. 596.) He believed that the condition was perispondylitis. Osler later, reported 3 cases as a neurosis. The literature of the subject consists of 15 articles in which are reported 21 cases. In 6 cases deformity is stated not to have occurred, in 6 others there is evidence that a deformity was present. In 3 cases kyphosis was definitely observed. Inflammatory processes secondary to typhoid fever are often destructive. It is remarkable that suppuration has never occurred in typhoid spine and that the deformity does not usually persist. In 5 of the cases in

which a deformity was observed it disappeared in a short time, in one only being present at the time of the report. Pyrexia, next to the kyphosis, is the most cogent reason for thinking that the condition is inflammatory. Of 17 cases no statement is made on this point in 5, it is stated that pyrexia was not observed in 2. In the remaining 10 cases the temperature was elevated during some portion of the affection. In 2 cases slight febrile reaction is reported. In the remaining 8 it seems to have reached at least 103° at some time. For these and other reasons the writer thinks that the true type of the "typhoid spine" is due to an inflammatory process. There have also been observed cases of neurosis apparently not unlike that known as the railroad spine.

The prognosis as to recovery is excellent. No deaths are recorded, but there has been marked disability for weeks, more often for months, and in many cases a series of exacerbations.

If during the febrile period or convalescence spinal symptoms arise, great care should be exercised. In some cases rest in a recumbent position will be sufficient. Additional relief may be given by mechanical devices affording additional support to the spinal column, as by a jacket or brace. In a similar fashion, extension may be serviceable. For the relief of pain antirheumatic, sedative, and hypnotic remedies may be employed, but unless the suffering is mild opiates will be necessary from time to time.

See also "REVIEW," Vol. III., pp. 257, 555.

POLYCLINIC, July, p. 336.

Arsenic-Cancer.

By JONATHAN HUTCHINSON, F.R.S., L.L.D.

A man, aged 70, was seen on Sept. 29, 1899, for an ulcer of some standing on the

right forefinger, and another on the back of the right shoulder, where the brace might have rubbed. Both ulcers were somewhat peculiar, and in association with them was a rough corneous condition of the palms which led Mr. Hutchinson at once to diagnose "arsenic-cancer." At first it was doubted, both by the patient's medical attendant and himself, whether he had ever taken much arsenic, but subsequent investigation proved that he had. Amputation of the finger and free excision of the ulcer on the shoulder were performed. Microscopic examination showed that both lesions were epitheliomata. A year later the scar of the amputation was sound, and so was that on the shoulder, but within an inch or two of the latter, towards the spine, was a rounded subcutaneous tumour, about as large as a hen's egg. The overlying skin was normal. On excision the tumour proved to be a soft carcinoma of the acinous type.

The amputation scar of the finger is now horn-like, and crossing it is a deep crack, which shows a florid surface at the bottom. The palms are roughened by numerous corns, there are others on the sides of his fingers, and even on their backs. On the wrists are dry, scaly patches like those of dry eczema. The scars of the two excisions on the shoulder are healthy, excepting that in the middle of the second some induration has recently taken place. There are many little patches of dry and roughened skin on various parts of the trunk and limbs. The soles show thickened cuticle on all the parts exposed to pressure, producing what might, were the condition less diffuse, be called large corns. Over these patches, which involve the whole heel and tread of the foot, but not the arch, there is white desquamation. On the outer side of one foot, quite out of the pressure-area, is a very peculiar patch. The horn-like epidermis

is half an inch thick, and stands in columns which are split vertically after the pattern of the Giant's Causeway. On the face and bald scalp are here and there little scabrous patches, any one of which may be the beginning of more serious changes. There are enlarged glands in both armpits, and also a few hard but small ones in the right posterior triangle of the neck.

About the age of 20 the patient had an eruption presumably psoriasis, which persisted a long time, and for which he says that arsenic was given. Subsequently the eruption returned and he was treated repeatedly for long periods. A few years prior to his first consultation with Mr. Hutchinson he took 7 minims of Fowler's solution thrice daily for some months, until it disagreed. The symptoms produced were wasting, debility, numbness in the feet and hands, and buzzing in the ears. The arsenic was discontinued for a time, but, as the eruption relapsed, it was again given, and again disagreed. From this second course the keratosis of his palms dates.

Mr. Hutchinson's original paper on arsenical cancer was presented to the Path. Soc. in 1887. At this time general incredulity was felt as to the connection. Not many confirmatory facts have been since recorded in England excepting by himself. A few have been published on the continent, and in America.

In 1894 Mr. Arbuthnot Lane recorded the case of a man, aged 63, who had taken arsenic for psoriasis almost half his life (*Clinical Soc. Transact.*, vol. xxvii., p. 102). In April, 1892, he excised from the back of the forearm an epitheliomatous growth 2 in. in diameter. In 1893 he had 3 cancerous ulcers on his scrotum, and in Dec., 1893, and Jan., 1894, he had fresh ulcers on the same part. There were 11 different

foci of these growths. All were freely excised. The arsenic was stopped in March, 1893, but growths continued to be produced a year later.

Mr Hutchinson has recorded the following cases :—

A man, aged 35, had 3 growths excised from different parts during 7 years. He had also keratosis of his palms. An interval of 10 years was alleged between the disuse of the arsenic and the development of the growths. He may, however, have been drinking arsenical beer all the time. The keratosis of the palms appeared soon after the disuse of the arsenic, and persisted (*Archives of Surgery*, vol. 5, p. 336).

A man, aged 46, who had taken arsenic since the age of 14, was seen. He was emaciated and very ill, and soon died. Cancer developed in an old psoriasis patch on the abdomen. It had been ulcerated 3 years, but had not progressed much until the last year. The glands had enlarged and ulcerated. There was also a cancerous ulcer on the back. The hands had become harsh and dry, but corns had not formed (*Archives*, vol. ix., p. 63).

In 2 cases, tumours in the neck, probably glandular in site, but malignant in course, occurred in patients who had formerly taken long courses of arsenic for skin diseases. (*Archives*, vol. viii., p. 282).

A lady had taken arsenic for long periods for lupus. In Dec., 1888, the palms and soles were in a condition of keratosis, and the further use of arsenic was forbidden. In July, 1890, they had quite recovered. In 1877, whilst taking arsenic, part of the edge of the lupus patch assumed the hard rolled condition of a rodent ulcer. It got well, however, under cauterisation with nitric acid. (*Archives*, vol. vi., pp. 186 and 233).

A woman, aged 45, who had long suffered from keratosis of the palms, came under observation with a large isolated growth in her

neck, as big as a child's fist. (*Archives*, vol. ix., p. 224). It was excised, and proved to be, not sarcomatous, but squamous-celled epithelioma. She had at the same time a growth under the skin in the left mammary region. There were also gland masses in one groin. Thickened and ulcerated portions of skin had on two occasions been excised from her palms, and the wounds left had healed for a time and then relapsed. She died, insane and comatose, 4 months later, with a suspicion of growths in the skull. In this case, as soon as Mr. Hutchinson saw the patient's hands, he diagnosed "arsenic-cancer," but all history of arsenic having been prescribed was denied. On looking up her old prescriptions, however, it was found that during 1879 and 1880, for 20 months continuously, she had taken 10 m. of Fowler's solution for epilepsy.

That the interval between the date of suspension of arsenic and the development of keratosis may be prolonged over many years is shown by several cases.

JOUR. OF OBST. AND GYNÆCOL., July, p. 1.
Pregnancy after Removal of Both Ovaries.
 By ALBAN DORAN, F.R.C.S.

A woman, aged 25, after bearing one child, underwent ovariectomy for a multilocular adenomatous cystic tumour of the left ovary. She then bore 4 more children. At the age of 39 the writer removed a similar tumour of the right ovary. The base required enucleation, part of the capsule was ligatured like a pedicle with silk, and the greater portion was cut away, but in that no trace of the Fallopian tube could be detected. A small tubercle on the left of the uterus was the sole remnant of the left appendages. After convalescence the periods recurred and continued till the patient

became pregnant. She bore a child at term 2 years after the operation. The periods returned and continued until the age of 45. The symptoms of the menopause were mild.

Schatz performed ovariectomy on a single woman, aged 20, on Feb. 20, 1880 (*Cent für Gynäk.*, 1885, p. 353). He removed a cystic tumour on the left ovary, and with it the outer third of the corresponding tube. The right ovary was of the size of a walnut, and showed evidence of cystic degeneration. He removed it, but purposely left some ovarian tissue in the stump, and spared the Fallopian tube altogether. Menstruation returned on May 9, 1880, after attacks of hypogastric pain in March and April. The patient married on April 23, 1884. The period ceased after Aug., and on May 12, 1885, she was delivered at term of a girl.

Stansbury Sutton (*American Jour. of Obst.*, vol. xxxiv., 1896, p. 92) has published the case of a woman, aged 32, who had a child, aged 6, when on March 20, 1892, he removed a multilocular cyst of the left ovary and a colloid cyst of the right ovary. The right pedicle was severed by the cautery, the left with scissors. The uterus being retroverted, it was fixed to the lower angle of the wound. On June 10, 1894, she gave birth to a male child. In 1896 she was safely delivered of another child. Stansbury Sutton believed that there must have been a detached piece of ovarian tissue in the left stump to which the cautery was not applied. In another case he removed both ovaries with the tubes for chronic inflammatory disease, or some similar affection. Eight months later the patient was delivered of a child. Gordon (*American Gyn. and Obst. Jour.*, 1896, p. 92) removed both ovaries and tubes in March, 1894, from a woman over 30 subject to chronic pelvic inflammation. So far as he knew

there were no fragments of ovarian tissue left. Menstruation began within 3 months and continued regular till June, 1895, when the patient became pregnant. She was delivered of a healthy child in March, 1896.

In all the cases, except that recorded by Schatz, the tube was included in the ligature and divided, and its stump must have recovered its functions afterwards. Schatz deliberately left the tube and a piece of ovarian tissue on. Mr. Doran in his case undoubtedly enucleated the entire cyst, but there must have been some detached tissue containing follicles in the ovarian ligament. He enucleated the base of the tumour from the posterior layer of the mesosalpinx, and apparently missed the tube altogether. Even supposing that the tube had been ligatured and divided, it might yet have resumed its functions. Such must have occurred in Stansbury Sutton's and Gordon's cases.

Ligature of the Fallopian tubes was till recently considered sufficient to insure sterility. But Dr. Horrocks has published a case in which the patient had been sterilized after Cæsarean section by ligaturing the Fallopian tubes. In spite of this she again became pregnant, and the uterus ruptured along the line of incision when near full term, and the child and a portion of the placenta escaped into the abdomen. Dr. Galabin removed the uterus. The patient recovered. The ligature on one side had cut through the tube, and the severed ends lay about $\frac{1}{2}$ inch apart. On the other side the tube and ligature looked as if the tying had only just been done, and on experimenting it was impossible to force a coloured liquid through the tube. Still, it was thought that probably the ovum which had become impregnated had got past the constriction produced by the ligature and so entered the uterus.

The writer, subsequently to writing this paper, discovered that he overlooked the following cases.

J. Anderson Robertson : Renewal of Menstruation and Subsequent Pregnancy after Removal of Both Ovaries (*Brit. Med. Jour.*, vol. ii., 1890, p. 722).—Patient aged 23. Both ovaries removed on Jan. 26, 1899, for chronic inflammatory changes; no note about tubes. Patient married in June, ceased menstruating on Oct. 25, and was delivered with the aid of forceps on Aug. 13, 1890. Possibly a small portion of healthy ovarian tissue extended up to or beyond the hilum of the right ovary. Most probably a piece of ovarian tissue was left on the distal end of the ovarian ligament, which is very short when there is no true new growth in the ovary.

Kossmann (*American Jour. of Obst.*, vol. xli., p. 839).—Oöphorectomy for chronic inflammatory disease of the appendages. *The tubes were not removed.* Patient became pregnant about a year and a half later, and was delivered spontaneously of a living child. Afterwards she again became pregnant.

M. M. Morris: Pregnancy following Removal of Both Ovaries and Tubes (*Boston Med. and Surg. Jour.*, vol. cxvli., 1901, p. 86).—Oöphorectomy for inflamed ovaries. In July, 1898, the ovaries and tubes were tied off with silk quite close to the uterus and removed. The right ovary contained a cyst as large as a hen's egg, and the left a hæmatoma nearly as large as the cyst. Menstruation returned; the patient became pregnant, and was delivered of a live child on Sept. 12, 1899. The child died within 3 weeks, and menstruation returned.

J. E. Engelmann (M. M. Morris, *loc. cit.*)—Pregnancy followed double ovariectomy in which the right tube was left intact. A microscopic examination of the specimen

showed that some ovarian tissue had been left, which explains the pregnancy.

JOHNS HOPKINS HOSP. BULLETIN, June,
p. 130.

Peripheral Venous Thrombosis in Pneumonia.

By WALTER R. STEINER, M.D.

Many cases of venous thrombosis in typhoid fever and influenza have been recorded, but there is little reference to this complication in pneumonia. Sears and Larrabee found 10 cases of venous thrombosis in 949 cases of pneumonia treated at the Boston City Hospital. The following 3 occurred in a series of about 500 cases of pneumonia at the Johns Hopkins Hospital.

CASE 1.—A negro, aged 21, was admitted on Jan. 9, 1899, the fifth day of an attack of pneumonia. The percussion note was slightly impaired over the upper left side and the breath sounds here were feeble. Over the left back the note was also somewhat impaired and the breath sounds had a distant quality. In the interscapular region distant tubular breathing was heard. Below the right angle of the scapula the note was impaired and there was tubular breathing. Two days later the pneumonic process seemed to involve the whole left lung and right lower lobe. A pleuropericardial friction rub was heard at the apex of the heart and the pulmonic second was markedly accentuated. There were symptoms of pleurisy at both bases. The crisis occurred on the ninth day. Seven days later, when resolution was progressing slowly, the temperature suddenly rose and there were a chill and prune juice sputum. No further lung involvement could

be detected. The temperature remained elevated for 5 days. Four days after its fall and 26 after the crisis there were thrombosis of the right popliteal vein and oedema of the foot and leg. The temperature rose at the onset to 100.8° and there was pain in the leg, especially in the calf. Nothing could be felt on palpation. Under lead and opium lotion the pain was relieved and the swelling reduced.

CASE 2. — A man, aged 63, a heavy drinker, was admitted on Feb. 1, 1901, with pneumonia which began 10 days before. The right upper and middle lobes were affected. The heart sounds were somewhat feeble and a systolic murmur was heard at the apex. Three days later the varicose veins of the right leg began to be painful, especially above the knee, where they were slightly red, firm, and tender. The temperature, which had been slowly falling, rose to 102.8° , and the right lower lobe began to show signs of involvement. He grew slowly worse and developed Cheyne-Stokes' breathing. Two days after the onset of the thrombosis the right internal saphenous vein was visible, of the size of a little finger, and cord-like on palpation. The right foot and lower two-thirds of the leg were oedematous. He gradually sank, and died on the twelfth day of the disease. At the necropsy were found unresolved pneumonia of the right lung, compensatory emphysema of the left lung, thrombosis of the right internal saphenous vein, fatty degeneration of the liver, anæmic infarction of the spleen, and fragmentation of the myocardium.

CASE 3.—A negro, aged 27, a hard drinker, was admitted on Jan. 4, 1902, the fifth day of an attack of pneumonia of the lower left lobe. A pleuropericardial friction rub was heard over the heart. Next day the

pulse was very small and irregular, and the respirations were shallow and 72-76. The heart sounds were almost inaudible, no sound being heard at the apex. He was infused with 1100 c.c. of saline solution. The lung signs were unchanged, except that the note cleared up somewhat in the left lower lobe behind but became more impaired above, in the scapular region, where tubular breathing was heard. A friction rub was audible below the left angle of the scapula. Resolution slowly took place. On Jan. 21 the temperature reached normal. Six days later he complained of pain in the right leg. In the popliteal space was a very tender cord-like swelling, of the size of the little finger. It could be traced down the calf to nearly the lower third of the leg. Next day he complained of pain in the right popliteal space, which was slightly tender. He was discharged on March 4 in excellent condition with the popliteal vein no longer palpable.

The writer could collect only 38 cases of thrombosis in pneumonia. In 27 out of 32 cases, the thrombosis occurred during convalescence, in 1 on the day of the crisis, and in 4 during the course of the disease. The lower limbs were always involved. As in typhoid fever and other infections the thrombosis usually occurred in the left femoral vein. This was involved alone in 6 cases, the left femoral and internal saphenous in 1, the left internal saphenous in 2, the left external iliac, femoral, and internal saphenous in 1, the right femoral in 2, the right and left femoral and left internal saphenous in 1, the right internal saphenous in 2, the right popliteal in 2, both femorals in 4, and the common iliacs at their bifurcation in 1. Adding to these the cases in which the limbs but not the veins involved are given, the left limb was alone

involved in 16 cases, the right in 10, and both limbs were involved in 7. The more frequent involvement of the left than the right limb is attributed by Dr. Welch to the more difficult return flow from the former in consequence of the greater length and obliquity of the left common iliac vein and its passage beneath the right common iliac artery. It has also been suggested that pressure upon this vein by a distended sigmoid flexure or rectum may likewise contribute to slowing of the blood current upon this side. Of the 41 cases 9 were fatal, 25 ended in recovery, and no definite information is given of 7. Eight necropsies were performed, and in 5 death was due to pulmonary embolism.

LANCET, Aug. 23, p. 493.

Banti's Disease.

By JAMES BARR, M.D., F.R.C.P.

Banti's disease is usually looked upon as a form of splenic anæmia which is not a very definite nosological or pathological entity. There are not more than 30 to 40 published cases of splenic anæmia. The pathology is not settled, and many varieties of disease are classified under this head. Most writers use the terms "Banti's disease," "splenic anæmia," "splenic cachexia," "splenic pseudo-leukæmia," "lymphadenoma splenica," and "spleno-megalia primitiva" as synonymous, the conditions common to all being a large spleen with more or less well-marked anæmia. Professor Banti of Florence described 3 cases of progressive anæmia (*Contributo allo Studio delle Anemie Progressive; Anæmia Ganglionare*, 1881). There were anæmia with enlargement of the spleen and secondary cirrhosis of the liver with ascites. Frequent hæmorrhages, such as epistaxis,

bleeding of the gums, hæmatemesis, and melæna, occurred. Pathologically he recognised in the sympathetic nervous system—semilunar ganglia, solar plexus, and cervical ganglia—lymphoid infiltration of the stroma of the ganglia, fatty and pigmentary degeneration of the ganglion cells, and degeneration of the nerve fibres. Dr. Barr relates the following cases :—

CASE 1.—A man, aged 48, was admitted to hospital on Aug. 12, 1901, in a precarious state. He had enjoyed good health up to 4 years previously, when he injured his abdomen. After this he noticed some swelling. In June, 1901, he strained himself lifting heavy weights. After that the swelling of the abdomen became more marked and about the end of July he had to give up work. Epistaxis and hæmatemesis occurred on several occasions. He appeared like a man suffering from cirrhosis. The dark, sallow, somewhat icteric appearance, injected malar capillaries, shrivelled skin, attenuated limbs, and emaciated frame, with large abdomen, all pointed to portal obstruction. The spleen filled the greater part of the left half of the abdomen. The liver was large, firm and irregular, and the abdominal cavity was distended with fluid. On two occasions 80 and 134 ounces of clear ascitic fluid were drawn off. The temperature was subnormal. There were mitral and tricuspid systolic murmurs with pulsation in the liver and veins of the neck. Friction fremitus was felt all over the abdomen and the fluid did not reaccumulate. He was kept on a dry diet and given salol and digitalis. His spleen diminished much, his general state greatly improved, and he was discharged in fair condition on Oct. 16, 1901.

He was readmitted on March 24, 1902, in a weak condition, suffering from dyspnoea, cough, and profuse expectoration of frothy mucus.



The skin was of a dirty, sallow, yellow colour, and was loose and shrivelled, the conjunctivæ had an icteric tinge, there was no subcutaneous fat, the abdomen was much enlarged, and both legs were œdematous. The left pleura was full of serous fluid and 88 ounces were withdrawn. The heart's action was feeble and the mitral and tricuspid valves were incompetent. Examination of the blood showed hæmoglobin, 40 per cent. ; red cells, 2,400,000 ; and white cells, 5,000 per c.mm. The circumference of the abdomen was 41 inches, the abdominal veins were much distended, and the liver was large and irregular. The spleen extended

nearly to Poupart's ligament and about 3 in. to the right of the mesial line ; the surface was smooth and two large notches about 4 in. apart could be readily felt. He was given first a terebene mixture and afterwards one of perchloride of iron and chloride of calcium. On April 11 examination of the blood gave hæmoglobin, 65 per cent. ; red cells, 2,560,000 ; and white cells, 8,000 per c.mm. A differential count of the white cells gave large hyaline, 44 per cent. ; lymphocytes, 20 per cent. ; finely granular oxyphiles, 35 per cent. ; and eosinophiles, 1 per cent. In the morning the temperature was usually subnormal, in the evening it frequently rose to 100°. He had recently gained a little flesh and weighed 9 stones and 6½ lb. He steadily improved and is now able to go about. The chest is clear, the heart's action is stronger, and he looks much better. The spleen is somewhat smaller, but it still measures 16½ in. by 13 in. The liver is still rather large. Examination of the blood gives erythrocytes 5,000,000, and leucocytes 12,500 per c.mm. ; hæmoglobin, 60 per cent. The Fig. shows the outline of the spleen.

CASE 2.—A man, aged 40, had been a cotton porter for 5 years, and a coal miner previously, the whole skin being studded with particles of embedded coal-dust. He was admitted on Nov. 2, 1901. About 20 years before he met with an accident to his spine. The lumbar spines were now very prominent. Five years before he vomited blood, and again in May, 1901, he had such severe hæmatemesis that he was unconscious for a couple of days. He thought that he vomitted about 2 quarts of blood. In hospital he had another attack of hæmatemesis, and his appearance led at once to examination of his liver for cirrhosis, though he said that he never drank more than a pint of beer daily.

He presented a distinctly sallow, icteric tinge with large malar capillaries, loose shrivelled skin, considerable emaciation with absence of subcutaneous fat, large abdomen, but no ascites. The lips were dry; the teeth were covered with sordes; the tongue was dry, brown, and tremulous, and the anterior half was rather denuded of epithelium; the gums were soft and spongy and bled readily; and he suffered from thirst. The liver was large and irregular. The spleen was large. The cardiac dulness was increased; to the right was a tricuspid systolic murmur. The blood count gave hæmoglobin 30 per cent. and red corpuscles 5,000,000 per c.mm. The urine amounted to 41 ounces; it was highly coloured and contained bile and a trace of albumin. There was considerable pain at the distal end of the right fourth metatarsal bone. There was slight swelling of the feet and the right knee joint. The blood contained hæmoglobin 56 per cent., red cells 6,000,000, and white cells 12,000 per c.mm. The feet became so tender that he could scarcely bear to have them touched; they were much swollen, red, and hot, and he could not bear to put them to the ground. Evidently there was severe erythromelalgia. For this pain morphia and Dover's powder were given and various linaments were applied. He had electric foot baths and his feet were immersed for hours daily in very hot water, which seemed to do good, but what enabled him to get on his feet was wrapping them in cotton wool and applying tightly over this an elastic bandage. He was given a mixture of the perchloride of iron and chloride of calcium. He is now much better and is able to get about. His liver and spleen are much smaller. The spleen measures 10 by $5\frac{1}{2}$ in. The urine is normal. The heart is fairly normal and there is no tricuspid regurgitation.

CASE 3.—A man, aged 38, was admitted on June 14, 1901, for a large tumour in the left hypochondrium. Exploration showed a large vascular spleen which bled profusely on the slightest handling. The liver was rather large and smooth, but was otherwise normal. About 5 years before, when jumping, he fell violently forwards, injuring his chest and abdomen. During the last 6 months he had lost a stone in weight. About 7 or 8 weeks before he noticed severe pain in the cardiac area shooting across from nipple to nipple. After meals this pain became localised in the epigastrium. He was very constipated, there being 5 or 6 days between the movements; lately there was melæna. The blood-pressure was so low that even propping him up in bed made him feel faint. He was much emaciated and rather anæmic, his skin was loose and dry, with no subcutaneous fat. There was a slight icteric tinge of the conjunctivæ, the mucous membrane of the mouth was dark red, and the tongue was red and denuded of epithelium. The area of the heart was small. There was a systolic murmur at the apex. Examination of the blood showed 2,800,000 red cells and no excess of leucocytes. The abdomen was much distended. The spleen filled the left hypochondrium, lumbar, and left half of the umbilical regions. The lower border of the liver could be felt below the costal margin. Salol and occasional doses of calomel were given. About a fortnight after admission his spleen began to shrink, but his abdomen filled with fluid. Between that time and the end of Oct. he was tapped 9 times, the average amount drawn off being 264 ounces. On Aug. 10 44 ounces of sanious fluid were drawn off from the left pleura, but a second operation was not required. Friction was heard and felt and eventually the pleural surfaces became adherent. By the end of Oct.

the general condition had much improved, and the spleen had shrunk so that it could only be felt below the costal margin. As it seemed useless to continue the tapping the abdomen was drained twice, for 10 and 16 days respectively. After the last operation numerous adhesions took place and the right half of the peritoneal cavity was practically obliterated. On May 22 great improvement had taken place. He could go about and attend to business. The cardiac area extended 2 in. to the right and $4\frac{1}{2}$ in. to the left of the mesial line. The spleen filled the greater part of the left hypochondrium and formed an irregular oval measuring 8 by 6 in., the lower margin extended about 2 in. below the border of the ribs. The blood-count gave hæmoglobin 85 per cent.; red corpuscles, 5,120,000, and white 11,560 per c.mm.; polynuclear cells, 72; lymphocytes, 18; eosinophile, 7; and hyaline, 3 per cent. The temperature was usually subnormal. Before the writer had an opportunity of seeing the peritoneum, he looked upon the case as one of chronic tuberculous peritonitis with an enlarged spleen. The occurrence of sanious fluid in the pleural cavity supported that view as cases of polyomenorrhitis (see "REVIEW," Vol. IV., p. 23), are nearly always tuberculous. After examination of the peritoneal cavity and its contents and watching the progress of the case that view was set aside.

The 3 patients were all males, aged respectively 48, 42, and 38. Each met with a more or less serious accident to the abdomen some years before the onset of the disease. The blood pressure was low no doubt from vaso-motor paresis of the splanchnic area. This lessened peripheral resistance led to cardiac atrophy, and in no case was the heart of the size and power required by a labouring man. The abdominal viscera were engorged while

the vessels of the rest of the body were comparatively empty. The skin was loose and shrivelled, the subcutaneous fat had almost completely disappeared and the muscles were atrophied. There was a low form of chronic peritonitis with marked friction fremitus, but without pyrexia. In Cases 1 and 3 there were ascitic and pleural effusions; but the complete disappearance of the fluid in Case 1 after a couple of tapplings showed that the ascites was not due to the cirrhosis; and in Case 2 at the operations the liver was found fairly normal. The albuminuria indicated renal engorgement and the well-marked erythromelalgia of both feet showed further vaso-motor paresis. As the spleen is a blood-destroying organ, during the early stage of engorgement this function would be increased and the excessive hæmolysis would lead to the anæmia which is a distinctive feature of the disease. When the fibrosis is well established the hæmolysis would diminish and might even sink below normal; such is shown by the increase of erythrocytes in Case 2 to 7,000,000 in Case 1 to 5,000,000, and in Case 3 to 5,120,000 per c.mm.

In all the cases there was marked oligochromæmia. In the early stages there were considerable diminution of the erythrocytes without alteration in their size or shape and no excessive leucocytosis.

The writer thinks that Banti's disease is probably due to vaso-motor paresis of the splanchnic area from disease of the visceral sympathetic ganglia. As a consequence there is great engorgement of the abdominal viscera, especially of the spleen and liver, increased hæmolysis and consequent oligochromæmia and oligocythæmia. The increased blood-supply eventually leads to fibrosis and lessened function. The peritoneal effusion seems to be due to vascularity rather than

portal obstruction. The paresis leads to retention of blood in the portal area with lessened supply to the rest of the body, fall in the general blood-pressure with lessened work for the heart, impairment of nutrition, and muscular atrophy. The digestion is usually impaired, there is apt to be an increase of toxins in the intestinal tract, with further aggravation of the mischief. The engorgement of the viscera and mucous membranes generally is a frequent source of hæmorrhage.

Splenectomy has been practised. In Case 1 and Case 3 it would certainly have proved fatal and in Case 2 the spleen is not sufficiently active for its removal. Treatment consists in as far as possible raising the general blood-pressure, improving the nutrition, and keeping the intestinal tract as aseptic as possible. For the latter purpose the writer gives salol, benzonaphthol, and an occasional saline purge; for the former such drugs as strychnine, digitalis, quinine, and caffeine are useful. Perchloride of iron with chloride of calcium are good hæmatinics and vascular tonics and lessen the liability to hæmorrhage. In the early stage the patient should be kept in bed. Probably a large elastic abdominal belt firmly applied would do good. The diet should be light, plain, simple and easily digested, such as peptonised bread-and-milk, raw eggs, milk puddings, bread and butter, fish, chicken, mutton broth, ripe fruit, tea, coffee, and milk. The following jelly is an agreeable preparation of chloride of calcium. Take about an ounce of gelatin, the juice of one lemon, from 2 to 4 drachms of chloride of calcium, and one pint of hot water. Dissolve the gelatin, etc., allow the preparation to set, and it is then ready for use.

DEUTSCHE MED. WOCH., July 17, p. 515.
The Indications for Pulmonary Operations.
 By Dr. RUDOLF RIEGNER.

In 1901 Lenhartz showed 6 patients before a scientific meeting who owed their recovery from pulmonary gangrene to pneumotomy. These results alone would justify surgical intervention in any similar case. The writer analyses the results obtained by operation in Prof. A. Fraenkel's clinic in Berlin, and draws conclusions as to the indications which should guide the physician to invoke the aid of surgery. As a rule parenchymatous pulmonary suppuration is alone suitable for operation. In suppuration of the mucous membranes, the bronchi form natural drainage tubes, and no incision is required. The conditions for which operation may be required are:

1. Acute and chronic abscesses,
2. Acute and subacute gangrene,
3. Chronic gangrene,
4. Bronchiectasis,
5. Tuberculosis.

Ulcerative processes combined with empyema need not be considered, as the treatment is practically that of the latter.

1.—If abscesses end in gangrene the indications for operation are those which hold in gangrene alone. In acute post-pneumonic abscesses the prognosis is generally favourable without operation. They usually begin as extensive necrosis of pulmonary tissue. A line of demarcation forms, the necrosed tissue, which usually includes parts of one or several bronchi, breaks down, and the pus escapes *per vias naturales*. The process of suppuration in post-influenzal pneumonia has certain peculiarities. Small but numerous foci of suppuration form round the bronchioles. These may coalesce into one large abscess or may lead to gangrene. No operation has been performed

for uncomplicated acute abscesses in Fränkel's clinic; if however an abscess appears from the physical signs or from exploratory puncture to be superficial and there is danger of its bursting into the pleural cavity with formation of a pyopneumothorax incision might be justifiable. If an acute abscess becomes chronic by the condensation of the tissue forming its walls an operation may be required. Freyhan (*Berliner Klinik*, 1898) incised 7 chronic abscesses of the lung, with 2 recoveries. Sometimes extensive resection of the ribs is indicated to allow the rigid walls to collapse.

CASE 1.—A woman, aged 40, had left pneumonia in Sept., 1900. Since then there had been constant cough and expectoration. She was admitted to hospital on Jan. 8, 1901. The left side of the thorax was retracted, and, except at the apex, there was dulness, pain, and feeble air entry. About the angle of the scapula there was tympanitic resonance, which slowly disappeared on lying down. The sputum contained streptococci, but no tubercle bacilli. The pus, obtained by exploratory puncture, contained numerous elastic fibres. The expectoration was copious, but intermittent. This with the result of exploration pointed to a focus of suppuration in the left base, though, owing to the extent of the dulness, a left basal empyema and secondary irruption into the lung could not be excluded. At the operation the entire lower lobe of the left lung was found broken down. A slough found in the abscess cavity had the structure of chronic pneumonia. Recovery followed and on June 28, 1901, the wound, in which the lumen of a bronchus presented, was reduced to the size of a bean. Here operation was clearly indicated to avert the dangers of chronic suppuration, hæmorrhage from erosion of vessels, and pyopneumothorax.

2.—In all cases of acute and subacute gangrene an operation should be performed provided that (a) the process is circumscribed and there are not multiple foci, and (b) the process is sufficiently superficial to be readily reached. Delay entails the extension of the gangrene to the other lung and the production of putrid bronchitis and chronic pneumonia. "Circumscribed" is intended to include those cases in which multiple foci are present, as after influenzal bronch-pneumonia, but are so close together that coalescence is probable. The diagnosis of gangrene rests on the character of the sputum which contains shreds of parenchyma and Dittrich's plugs. The recognition that a patch of gangrene is solitary is not easy. The signs of a cavity are usually absent unless the gangrene is apical; even bronchial breathing and coarse crepitations may fail if no large bronchus is connected with it. Thus the physical signs are reduced to an area of more or less pronounced dulness which, however, is of great importance if wholly surrounded by normal resonance. If dulness is present in several parts or over both lungs the first condition for successful surgical intervention is wanting. The physical signs and the nature of the sputum must have a certain definite relation to each other. The more localised the patch of dulness and the more copious and frequent the expectoration of shreds of pulmonary tissue, the better are the prospects of operation. Skiagraphy is also of great use when interpreted in conjunction with the physical signs.

CASE 2.—A man, aged 45, had, in Sept., 1901, anorexia, a sweetish taste in the mouth, and nausea. On Sept. 20 there was a violent fit of coughing with hæmoptysis, which recurred several times. The sputum which was of a faint sweetish odour

contained no tubercle bacilli. On Oct. 20 a patch of tympanitic resonance was found round the angle of the right scapula. This became steadily more marked *pari passu* with an increase in the amount of sputum, which became foetid, and on Oct. 30 contained numerous parenchymatous shreds. There was no bronchial breathing or other sign of a cavity. Nevertheless a circumscribed patch of gangrene was diagnosed at the angle of the scapula. A skiagraph showed a dark patch surrounded by normal transparent tissue (Fig.). An operation was performed and



Posterior view of thorax.

the cavity, which measured over 2in. in diameter, was drained. The patient, in March, 1902, was still in hospital, but had practically recovered.

CASE 3.—A man, aged 48, was, on Jan. 6, 1902, suddenly seized with pain in the right chest which was accompanied by hæmorrhagic sputum. On Jan. 11 dulness was found at the right base posteriorly. There were diffuse bronchitis and cough, but no signs of cavity. The sputum contained blood, septic organisms, Dittrich's plugs, parenchymatous shreds, and elastic fibres. A radiograph showed a dark shadow below the angle of the

right scapula. At the operation a cavity of the size of a fist was found $\frac{3}{4}$ in. beneath the pleura; the absence of physical signs was explained by there being no communication between it and a large bronchus. Though putrid bronchitis and secondary pneumonia proved fatal (the man was a drinker and much debilitated) the treatment by operation was undoubtedly correct. Skiagraphy alone is liable to mislead in the choice of cases for operation as is shown by the following case: Both posteriorly and anteriorly a dark shadow was shown by a skiagraph over the base of the right lung, and pneumotomy was performed. Instead of a solitary focus several gangrenous bronchiectatic cavities with indurative pneumonia were found. Death immediately followed the operation. Here operation was contraindicated, because (a) there was a history of cough for 2 years, (b) the dulness involved the whole of the lower part of the right thorax and was not surrounded by a zone of normal resonance, and (c) the sputum though foetid, contained very few parenchymatous shreds. Exploratory puncture in gangrene should be avoided. If the layers of the pleuræ are not adherent the pleural cavity may become infected. There is also danger of infection of the thoracic wall or of puncture of a large vessel. The results are unreliable as the needle may enter a part of the cavity containing air. In the above cases the diagnosis was made without its aid.

3. In chronic gangrene surgery can seldom succeed. Gangrene, even if originally circumscribed, is followed sooner or later by more or less diffuse pneumonia, so that a whole lobe may give the physical signs of consolidation. This, combined with the fact that the characteristic shreds and elastic fibres in the sputum are scanty or absent, makes localisation difficult or impossible. If by chance the

cavity is found and opened chronic septic pneumonia probably continues, possibly in the other lung, and may eventually prove fatal.

4. Bronchiectasis is a chronic process which cannot always be distinguished from chronic gangrene. Even if decomposition in a large saccular dilatation demands operative treatment the course of the diffuse process in other parts of the lungs is uninfluenced. Recovery after operation may occur, as the following case proves, but is possible only under exceptional conditions.

CASE 4.—A man, aged 21, had a large solitary bronchiectatic cavity at the right apex with gangrenous destruction of tissue. The sputum contained parenchymatous shreds. Pneumotomy was performed, the cavity was drained, and after a long convalescence there was complete recovery. Two other cases of bronchiectasis were operated on, but unsuccessfully.

5. The writer has no experience of the surgery of tuberculous cavities, but no case has been reported in which the opening of a cavity has cured phthisis. Lawson and Tuffier claim to have cured 2 cases of phthisis by resection of the whole of the apex of the lung with the contained cavities. Quincke and Spengler have noted improvement after resection of ribs with a view to aiding collapse of the vomical walls, without incision of the cavity. Every operation in phthisis is liable to be followed by acute dissemination of bacilli. Solitary tuberculous foci are extremely rare in the lungs, and if present cannot usually be diagnosed. In the stage of cavity formation both lungs are probably extensively diseased, and the thick and rigid cavity walls give little prospect of cure by collapse.

MÜNCH. MED. WOCH., April 1, p. 520.

Multiple Hepatic Abscesses: Recovery after Operation.

By Dr. M. WILMS.

Geigel (*Zeitschr. f. Klin. Med.*) published, in 1889, a case of spontaneous recovery after hepatic abscess due to gall-stones, probably the only one on record. Spontaneous cure may occur in other forms of suppurative hepatitis without rupture into neighbouring organs, for all gradations between encapsulated abscesses with inspissated contents and cicatrices have been found. It is most likely to occur in tropical and traumatic abscesses, probably, because they are usually solitary. Recovery from hepatic abscesses secondary to cholangitis, cholecystitis, pylephlebitis, perityphlitis, or pyæmia is extremely rare, probably because these are usually multiple. As regards pyæmia, Vedrènes reports a case in which a young man received sword cuts on the head and hands which suppurated; 3 weeks later pyæmia set in with pain over the left lobe of the liver. A fluctuating swelling then appeared between the ensiform cartilage and the umbilicus, which was incised with the cautery. A quantity of pus escaped and the patient recovered. Körte has seen recovery from suppurative hepatitis after perityphlitis. In his 2 cases, however, there was no portal pyæmia; the infection extended directly behind the ascending colon, and produced a sub-diaphragmatic abscess, which, in turn, was followed by hepatic suppuration. All the cases of multiple hepatic abscesses due to portal thrombosis secondary to perityphlitis which the writer has seen have ended fatally. As regards hepatic abscesses secondary to cholecystitis and cholangitis, Geigel's claim is probably justifiable, and the writer has

found no other report of recovery from them, with or without operation. Thus the following case is of unique interest :—

A woman, aged 43, had jaundice in the spring of 1900. The stools were clay-coloured and the urine dark. The liver was enlarged, and there was obstinate vomiting. There were no typical attacks of biliary colic and it was doubtful whether gall-stones or catarrhal jaundice were the cause. This condition persisted for several months, the general health deteriorated, and carcinoma was suspected. Then improvement set in and health was restored. In Feb., 1891, intense jaundice and obstinate vomiting suddenly reappeared. The temperature rose to 103.8° , and pains suggestive of biliary colic appeared. No stones were found in the stools. This continued till April when the patient entered hospital. There were great emaciation, complete anorexia, and pyrexia up to 101.6° . The heart, lungs, and kidneys were healthy. The liver, especially the right lobe, was enlarged, and in the region of the gall-bladder was a resistant swelling, which moved with respiration. An incision over the region of the gall-bladder showed that the resistant mass was the enlarged right lobe of the liver, which was studded with abscesses, the largest of the size of a cherry, and apparently on the point of rupture. The intestines and omentum in the neighbourhood

were matted together with recent lymph. On separating the adhesions the enlarged gall-bladder was exposed. The peritoneal cavity was shut off by gauze tampons, and the gall-bladder was opened. It contained mucopurulent fluid, but no gall-stones. Neither were there any calculi in the bile ducts. A drainage tube was inserted and the walls closed round it. All the abscesses which were visible—about 20—many of which were on the under surface of the liver, were incised, and in some instances scraped. The under and anterior surfaces of the liver were covered with gauze, and the drainage-tube in the gall-bladder was conducted outside the abdominal wound, which was partly closed round it. The protective tampons were left *in situ*. Recovery seemed hopeless. But after profuse discharge of pus mixed with bile for a few days, the general and local conditions improved. The tampons were removed on the fourteenth day, then the gauze round the liver and the drainage-tube. The wound rapidly healed, and 6 weeks after the operation the patient departed cured. She had gained 10 lb. in weight, the abdomen was pliable and not tender, the bowels acted daily, the fæces being normally coloured, and the appetite excellent. Thus suppurative hepatitis secondary to cholangitis and cholecystitis was cured by incision of the abscesses and drainage.

MEDICINE.

Rheumatic Hyperpyrexia followed by Symptoms of Disseminated Sclerosis.—William Allen, L.S.A., and James W. Russell, M.A., M.D., M.R.C.P. (*Lancet*, July 19, p. 150).—A man, aged 30, was attacked with acute rheumatism on Nov. 14, 1898. The disease ran a mild course and on the morning of Nov. 17 the temperature was normal. In consequence of a fright he got out of bed and in the evening he was restless and inclined to wander. The temperature was 107° , but it was quickly reduced by a cold pack. Next morning the temperature was again 107° and though it was reduced by cold packs it rose to 108° . Early in the afternoon he became violently delirious and the mercury reached the end of a thermometer the maximum register of which was 115° . At about 3 p.m. he was unconscious, the breathing was shallow and irregular, and the face was cyanosed. A thermometer placed in the axilla at once registered its maximum, 110° . The pulse was not so bad as the general condition led the writers to expect. As there was no bath in the house ice was packed round the body and limbs and on the head, chest, and abdomen. After three-quarters of an hour the temperature slowly fell to 102° and the ice was removed. The temperature subsequently fell to 98° . During the reduction of the temperature there were general convulsions, which at the end of the hour recurred every few minutes. An hour later the temperature had risen to 99° , and the patient moved restlessly, made inarticulate sounds, and resisted passive movement. Consciousness slowly returned, but the ordinary mental condition was not regained for several days. The temperature was constantly and irregu-

larly raised for the succeeding 3 weeks, but it only reached 104° . On regaining consciousness the patient had difficulty of articulation, and made himself understood with difficulty, but there was no aphasia.

When he became convalescent he was unable to walk owing to ataxia. This slowly improved until the following June. With help he walked taking short steps, and putting the feet forward with care and much unevenness. On standing with the feet together and the eyes shut there was complete loss of balance. In the upper limbs there was ataxia but of less degree. Movements of the hands and fingers were unsteady and writing was almost impossible, the pen spluttering and catching on the paper, and the attempt being finally given up in despair.

On May 2nd, 1900, he walked with great care, putting one foot before the other slowly and deliberately. The feet were kept apart and turning was especially difficult. He was unable to walk along a line without support. Romberg's sign was slightly marked but when lifting one foot on to a chair there was marked disorder of movement. The movements of the upper limbs were clumsy: in attempting to grasp a hand there was a coarse, uneven movement. When held out horizontally, with the arms close to the body, the hands were steady, except for slight wavering on the right side, but if the forefingers were pressed together with the arms well out from the body there was marked rhythmical coarse tremor. There was much unsteadiness in placing the forefinger on the tip of the nose even with the eyes open and there was similar difficulty in bringing the tips of the forefingers together from

a distance. The power of writing had considerably improved, though there was tremor which was only controlled by keeping the pen firmly pressed on the paper. Motor power in the limbs appeared to be intact. Speech was slow, monotonous, and scanning; it would have passed as a typical example of the speech of disseminated sclerosis. Articulation was slightly blurred. The plantar reflexes were sluggish and flexor in type. The knee-jerks were moderately increased. On testing for ankle-clonus a few slight contractions were obtained on each side. The muscles were well nourished. The electrical reactions were somewhat sluggish both to faradism and galvanism. Kathodal closing contraction was uniformly greater than anodal closing contraction.

In the literature of rheumatic hyperpyrexia the writers could find only one similar case, which was published by Dr. Arthur Foxwell (*Lancet*, May 29, 1886, p. 1012). The highest temperature was 111° . The hyperpyrexia occurred on Sept. 28, 1884, and on Oct. 9 difficulty in pronouncing consonants and nasal intonation were noticed. On Oct. 20 rhythmical tremors were observed; the knee-jerks were exaggerated, more so on the left, and there were right ankle-clonus and slight left ankle-clonus. The movements of the legs were feeble and the electrical reactions were sluggish. On the 22nd the speech was perceptibly scanning, and on the 25th the gait was ataxic and there was slight nystagmus. Considerable improvement occurred, but a year later there were still some disorder of speech, paresis of the limbs, and tremors, the left arm and right leg being most affected. Dr. Foxwell suggested as an explanation diffused inflammation of the medulla and lower half of the pons. Small scattered hæmorrhages would be an alternative. The occurrence of convulsions during the hyperpyrexia in the present case suggests some immediate lesion. One case of rheumatic hyperpyrexia is recorded in which such a lesion was found post mortem.

Poisoning from the Medicinal Use of Arsenic.—Jonathan Hutchinson, F.R.S. (*Poly-clinic*, May, p. 257).—In March, 1902, a woman had keratosis of the palms and soles (including the digits) and melasma of skin of the neck. The abdomen was still darker than the neck, being almost black. The palms were everywhere rough and dry, and scattered over them were numerous little horny indurations, more like corns than warts. The neck was of a deep brownish black tint mottled with little islands of paler hue (probably scars) and shading off gradually into the more healthy skin above and below. The face was florid and somewhat bronzed, but not definitely melasmic.

Eight years before she consulted Mr. Hutchinson for erythematous lupus of the face and scalp. He applied the acid nitrate of mercury to the patches and prescribed liq. arsenicalis m. 4 thrice daily. Some of the patches on her face were cured, others continued to appear on the chest and shoulders. Two years later Mr. Hutchinson thought the skin was discoloured and advised discontinuance of the arsenic, but she continued to take it. On Aug. 1, 1901, she was seen after an absence of 3 years, during which she had taken the arsenic without intermission. The frequency of the dose had been varied, sometimes the medicine was taken thrice, sometimes twice, sometimes only once a day. The chief reason for reducing the frequency had been the occurrence of diarrhœa. For some years she had observed her skin getting brown, and had suffered much from tender feet. During the whole of the previous summer the feet had been so tender that she could scarcely walk and at times she could not stand. The hands also had been tender and numb, and the palms had become dry and rough. She had felt curious sensations of numbness with a sense of enlargement of the hands and feet, the latter often feeling very heavy and as if of enormous size. She had difficulty in managing her needle and even in buttoning her dress, and

would frequently drop small objects which she could not pick up again. For a year she had almost continually coryza with some cough but no special redness of the eyes. She had latterly lost flesh and become very weak. Disuse of arsenic was enjoined. On Nov. 18 she was much improved. She had been taking nux vomica and small doses of iodide of potassium. The complexion was clearer, and the palms were less horny. The feet were still somewhat numb, and were liable to become much more so when cold. The hands also would "die" when chilled, and she was liable to sudden attacks of shivering, followed by fever. The bowels were very costive, and she still had, almost constantly, catarrh. Nearly 5 months have now elapsed since her second visit, and 8 since discontinuing the arsenic. Her improvement has been very great. She feels stronger, the morbid sensations in her hands and feet are much less, and the condition of the skin is much less marked. The lupus is quite cured.

The improvement, which has followed the disuse of the drug, does not always occur. Sometimes the symptoms increase for a time after entire disuse of the drug. In several cases multiple cancers have continued to develop even for years after the arsenic had been disused. The pigmentation of the skin in this case is not likely to wholly disappear, for it is very deep. The experience of recent years has furnished several new indications of arsenical disagreement. Formerly redness of the conjunctivæ and pricking pain were almost solely looked for. But they are not always present, and there are other signs of at least equal value—muddy state of the skin generally, pigmentation in certain regions, dryness of the palms and soles, advancing to definite keratosis, alterations of sensibility in the extremities, and shingles are all indications. If the palms become horny it is high time to desist completely and permanently from giving arsenic, for this condition is the precursor of cancer.

Acute Non-Suppurative Perinephritis.—Dr. David Newman (*Glasgow Med. Jour.*, July, p. 33).—Inflammation of the cellular and adipose tissue surrounding the kidney has been divided into 3 varieties—lipomatous, sclerous, and suppurative. The case described below does not, however, come under any of these headings, and must be described as one of acute non-suppurative perinephritis.

A man was admitted to hospital on Dec. 20, 1901. He enjoyed good health up to 8 weeks previously, when he developed pleurisy. He was confined to the house 4 weeks. The pleurisy was said to have begun on the right side and then extended to the base of the left lung. He was allowed out for the first time about 3 weeks prior to admission. He thought that "he caught a chill." Next day he complained of severe pain in the right lumbar region which increased up to the time of admission.

He looked extremely ill. His face was pale with dark rings under the eyes. The temperature was 99°, the respirations were 20, and the pulse was 88 and of low tension. He had a slight cough, which he tried to restrain, on account of the pain produced, and a little muco-purulent expectoration was present. There were slight dulness at the base of the right lung behind and diminution in the respiratory murmur and vocal resonance and fremitus. While sitting or standing the body was bent forward and inclined towards the right. In the bed he lay with the spinal column fixed and slightly deviated to the right, so that the lower ribs almost touched the crest of the ilium. The right thigh he kept flexed, and he could not extend it beyond 165°. Every movement caused great pain in the loin. He complained of spontaneous pain and tenderness on the right side of the abdomen, where the muscles were rigid. On examination under chloroform the whole space between the right costal cartilages and the ilium was found occupied by a swelling which extended forward to within 4 in. of the middle line. The liver was

pressed downwards and to the left, so that the lower margin was $3\frac{1}{2}$ in. below the ensiform cartilage. The swelling in the renal region was non-fluctuant, firm, and slightly elastic; there was no distinct bulging. The urine was of s.g. 1015, and contained nothing abnormal. During the night he suffered great agony, which was only relieved by hypodermic injections of morphia. The temperature never rose above 98.8° .

On Dec. 21 the lumbar region was explored. Surrounding the kidney on all sides was a huge mass of recently formed inflammatory tissue mixed with fat. Through $3\frac{1}{2}$ in. of this the incision had to be extended before the kidney was reached. On pressing the hand upwards under the diaphragm the inflammatory material was found to extend almost to the middle line. Downwards it extended well into the false pelvis. Several incisions were made with the expectation of finding pus, but none was discovered. Drainage-tubes were inserted, and the wound was sutured. The kidney appeared to be healthy, and did not contain any calculi. The pain was almost entirely relieved and much serous fluid and oil escaped from the wound. The drainage-tubes were removed on Jan. 17, as the discharge had practically ceased. On Jan. 24 the swelling was about half the size it was prior to the operation, and the wound was completely healed.

The loose perirenal adipose tissue is liable to infection, either from the kidney or from distant parts. That it is prone to suppuration has long been recognised, but Rayer was the first who gave a clear and elaborate description of perinephritis. He described 3 groups, viz:—
(1) Primary perinephritis, in which the inflammation arose independently of renal disease.
(2) Consecutive extrarenal suppuration, or abscesses secondary to inflammation of the kidney, but without any fistulous communication.
(3) Consecutive extrarenal suppuration, due to a fistulous communication between the kidney and the perinephric cellular tissue. Perinephritic abscess apparently is most

frequently caused by inflammation extending from the kidney; only in a few instances has it originated from other causes. It has been traced to septic infection in febrile conditions—such as typhus and typhoid fevers and variola—purulent absorption in inflammation of the connective tissue surrounding the uterus, vagina, or rectum, succeeding parturition or an operation. In puerperal perinephritis, which is by no means uncommon as a complication of pelvic cellulitis, an abscess frequently develops near the ovaries or Fallopian tubes, and, gradually dissecting its way, spreads out between the lumbar muscles and the peritoneum. Operations upon the testicle or spermatic cord are liable to excite inflammation of the connective tissue surrounding the bladder, especially at its base, whence suppuration may extend to the perirenal connective tissues. Cases are recorded in which the disease succeeded operations upon the bladder, urethra, perineum, rectum, and uterus, and suppurative disease of the gall-bladder, liver, and spleen.

In most cases of perinephritis consequent on extension from distant parts the disease culminates in suppuration. In a few, however, such as the case above described, great induration may take place without suppuration. Not infrequently an inflammatory process is induced by local injury, but occasionally it may be due to the extension of non-pyogenic infection. In the present case it probably was due to the latter cause. The patient had acute pleurisy, which terminated in recovery without formation of empyema. An infective process extending from the cavity of the thorax to the tissue around the right kidney seems the most plausible explanation. The pathologist frequently finds cases of non-pyogenic infection of the pleura, in which there is great thickening of the connective tissue and adherence of the pleural surfaces without evidence of purulent infection. Should a loose, poorly nourished tissue, such as the adipose capsule of the kidney, become infected, rapid and extensive induration might be induced.

Calculus Pyonephrosis causing Intestinal Obstruction.—Dr. David Newman (*Glasgow Med. Jour.*, July, p. 37).—A woman, aged 57, was admitted to hospital on Feb. 1. Her first serious illness occurred 30 years before, when she was confined to bed for 3 weeks. She had great pain in the left loin, and the quantity of urine passed was small. Complete recovery followed. Five years later she had a similar attack, but in addition there were sickness and vomiting. Some small stones were passed. A third attack occurred 10 years ago. Between the attacks she enjoyed fair health, although when tired she had been subject more or less to pain in the left loin. Sometimes the pain lasted for a few days, but it seldom was severe. The pain was accompanied by diminution in the quantity of urine and a swelling in the left loin. She never noticed either pus or blood in the urine. Seven weeks prior to admission she was seized with shivering, which was followed by pain in the left loin and reappearance of the old swelling. Since then the pain was constantly present in the loin, shooting down to the left labium. She seemed to progress favourably until a week ago, when there was considerable difficulty in getting the bowels to act. She had always been constipated, especially when the swelling in the loin was present. No satisfactory action occurred during the last 8 days.

She was thin and emaciated, with puckered face and prominent eyes, and she looked extremely ill. The temperature was normal, and the pulse feeble and thready and occasionally intermittent. The bowels had not acted for a week, but per rectum only a few hard masses could be detected. Several olive oil and soap and water enemata were given without satisfactory result. The urine was of a dark amber colour, acid, of s.g. 1024, and contained a trace of albumin. The abdomen was greatly distended as in cases of unilocular ovarian cyst. Fluctuation could be made out from the right nipple line to the left flank. But with the

patient lying on her back a tympanitic note was elicited over the anterior surface of the abdomen as far as the left nipple line. Beyond that limit, while the fluctuation was still present, there was absence of resonance. On moving the patient to the left side the area of dull percussion was increased towards the left, and when she lay upon the right side the area of dull percussion was limited by the left nipple line or nearly so, while a dull area developed close to the region of the ascending colon.

Feb. 4.—The patient was much weaker and every endeavour to induce an action of the bowels failed. Examination under chloroform led to the conclusion that a portion of the bowel was greatly distended, probably from pressure upon the descending colon by the greatly distended left kidney. On deep palpation the left kidney was found to extend as far as the middle line, although clear percussion could be elicited to the left of the rectus abdominis muscle. By a lumbar incision the kidney was freely incised, and about 40 oz. of thick gelatinous muco-purulent fluid slowly escaped. When this had been washed out a large calculus was discovered impacted in the pelvis of the kidney. The stone was so firmly fixed that it could be removed only in portions, and one part had to be left on account of the patient's feeble state. The incision in the kidney was stitched to the parietes, and the cavity packed with gauze. Death occurred next morning.

NECROPSY.—The anterior part of the abdomen was occupied by a sac as large as a football, containing pultaceous fæces, formed by distended cæcum and ascending colon. The transverse and descending colon were completely collapsed. There was a valve-like obstruction immediately below the collapsed large intestine. The left kidney was greatly enlarged, and its capsule thickened and adherent; the pelvis was enormously distended, and contained a portion of a calculus.

Chronic pyonephrosis of the left kidney, partly by pressure and partly by inducing inflammatory adhesions, had led to chronic intestinal obstruction which finally became complete.

The Occurrence of Living Green Vegetable Cells in the Stomach.—A. Kühn (*Centralbl. f. Inn. Med.*, July 12, p. 705).—It is usually assumed that a green colour of the gastric contents is necessarily due to bile. The following cases prove that vomited matter of the colour of bile or spinach, may contain no trace of bile, but living green-celled algæ, which are capable of reproduction.

CASE 1.—A student, aged 25, had symptoms of gastric ulcer with great hyperacidity. Laparotomy was performed, and an ulcer found near the pylorus, the lumen of which was narrowed owing to the thickening of its walls. Pylorotomy and gastroenterostomy were performed. Recovery followed. For some time before, and on one occasion after the operation there was frequent vomiting of a dark green material containing much HCl, but no bile. Microscopically there were found bright-green cells slightly smaller than leucocytes, containing structures which were possibly nuclei or vacuoles. In one preparation there were other bodies which were almost certainly algæ. These were dark green cells, which were smaller than those already described, and were either round or provided with processes. One cell had an offshoot composed of a chain of oval cells on one side and a unicellular bulbous-ended process on the other. These were evidently distinct varieties and could not be cultivated. The larger bright green variety, however, multiplied rapidly in an incubator at 37°C. and formed a thick olive green deposit on the bottom of the vessel. If kept for some time in the incubator the multiplication of these green cells was somewhat retarded by the development of yeast cells. A few drops of HCl inhibited the

growth of the latter, and restored the vigorous development of the former. After 2½ months in the incubator there was a dark green sediment several mm. in thickness, which was composed of green cells in process of division and numerous oval structures, probably spores, with a few yeast cells.

CASE 2.—A girl was admitted for chlorosis and symptoms of gastric ulcer. There were marked hyperchlorhydria and constant vomiting. On one occasion a sea-green fluid was obtained by washing out the empty stomach. It contained a moderate percentage of free HCl, but no bile. In the sediment were numerous greenish cells, mostly in process of division, which in the course of 7 weeks in the incubator formed a beautiful dark green culture on the bottom of the vessel. Growth was stimulated by the addition of HCl.

CASE 3.—A girl, aged 20, with symptoms of gastric ulcer frequently vomited a green material which contained considerable quantities of free HCl, but no bile. There were green bodies consisting of one or two cells with bright spots, which were probably vacuoles. Within 24 hours a dense algal-like culture was obtained, which consisted of a meshwork of fairly large, irregular, structureless bodies with numerous offshoots, and smaller independent cells in process of active division. Interspersed were a few yeast cells. On the addition of HCl to the extent of 0.5 per cent. the growth became more dense, and of a darker bluish green, while the number of yeast cells decreased. The culture experiments on solid media are not yet concluded.

According to De Bary the vegetable organisms which can develop in the stomach are (1) sarcinæ, (2) hyphomycetes (moulds), (3) blastomycetes (yeasts), (4) bacteria and schizomycetes. A vegetable organism which produces a green colouring matter in the stomach has never been described. Possibly the organism is a rare form of yeast. More probably the growth consists of several varieties of algæ swallowed in drinking water. The continuous production of chlorophyll in the stomach

(a dark incubator) would be remarkable, and Prof. Kobert concluded that the colouring matter was not chlorophyll, as the characteristic absorption bands were absent. Some of the bodies were not unlike the chlorophyceæ, and especially the pleurococcaceæ, others resembled the schizophyceæ, a species of algæ which produce a colouring matter composed of a blue substance phycocyanin and a yellow, allied to the leaf green phycoxanthin.

Possibly green vomit which contains vegetable organisms and no bile, may prove of diagnostic importance. In the writer's three cases there were hyperchlorhydria and symptoms of gastric ulcer. This condition appears to be not uncommon in Rostock, but whether this depends on the geographical distribution of the algæ concerned is at present uncertain.

The Diagnosis of Carcinoma of the Large Intestine.—F. Crämer (*Münch. Med. Woch.*, June 17, p. 993) emphasises certain symptoms of carcinoma of the large intestine, the diagnostic importance of which is usually underrated. Foremost among them is colic. If a middle-aged subject, whose digestive organs have previously acted normally, begins to suffer from increasing irregularity of defecation and periodical attacks of colic, with or without symptoms of intestinal obstruction, the general health in the intervals being normal, carcinoma of the colon should be suspected even in the absence of cachexia and emaciation. Small and especially repeated hæmorrhages, and increasing tenesmus may for long be the only symptoms of carcinoma. Hæmorrhoids should be excluded by rectal inspection with Kelly's speculum. Rarely the first symptoms may be a copious hæmorrhage followed by irregular action of the bowels. The attack of colic may be preceded by partial or complete intestinal obstruction, tympanites, eructation, anorexia, general malaise, vomiting, and pyrexia. If the obstruction is overcome

by irrigations, the pyrexia and other symptoms temporarily disappear. Sooner or later, however, the attacks recur, emaciation appears, and a tumour is felt. If the growth spreads longitudinally instead of circularly symptoms of obstruction may be absent. Tenesmus alone may be due to the abuse of tobacco. A sure sign of chronic obstruction is the intestinal "stiffening" ("Darmsteifung") described by Nothnagel: during an attack of colic the intestine can be felt to contract slowly into a roundish smooth tumour. The contractions of the large intestine are said to be slower and more regular than those of the small, so that the character of the movements may indicate which part of the intestines is involved. These intestinal contractions are not present in acute obstruction, as they require for their production compensatory hypertrophy of the muscular layers above the stricture. In 6 of the writer's cases of chronic, but not always malignant, obstruction of the large intestine, a noise was present as of water being poured on to the ground from a jug, so loud, that it could be heard some distance from the bed. It was probably due to the recoil of fluid which was forced against, but not through the obstruction. It is quite distinct from the loud gurgling sometimes present in intestinal affections. Tenesmus, which is one of the most distressing symptoms and which once established usually persists, is the more marked the nearer the growth approaches the anus. Whenever present the rectum should be thoroughly explored digitally and ocularly. An admixture of pus with the fæces has the same significance as blood. In purulent proctitis also there are blood and pus in the stools with violent tenesmus and pain in the descending colon, so that the clinical resemblance to the symptoms of carcinoma is very close, especially if the patient is pale and debilitated. In proctitis the use of the speculum, which should be preceded by thorough intestinal irrigation, reveals a reddened readily bleeding mucosa, covered with purulent material. Even then, as in a case of the writer's,

carcinoma is not excluded, as proctitis may occur with a growth higher in the colon. In 2 cases carcinoma was excluded by the repeated failure to detect carcinomatous or formed elements in the pus hardened in formalin. More often the exclusion of carcinoma demands continued observation. If after months of treatment the proctitis is cured or improved, the tenesmus disappears, and there are no symptoms of obstruction, there is no carcinoma. The shape of the stools (flattening, etc.) is, contrary to the usually accepted doctrine, of no diagnostic importance, as it depends entirely on the sphincter ani, and the state of contraction of the colon or the rectum. The fæces after passing the obstruction may regain a perfectly natural contour in the bowel below, provided there is no rectal or sphincteric spasm, and on the other hand if there is proctitis without cancer there is frequently distortion of the stools. Emaciation and cachexia are of little aid to diagnosis. There may be less disturbance to the general health in carcinoma of the colon, and especially of the descending colon and the rectum than there is in chronic atony. One of the writer's patients was in good health and weighed 2 cwt. He fell ill and died of acute obstruction 8 days later. That the carcinoma of the descending colon was not recent was proved by its length of 6½ in.

Diagnosis and Treatment of Cholelithiasis.—J. Boas (*Münch. Med. Woch.*, April 15, p. 604).—Cholelithiasis is frequently mistaken for gastric affections, especially gastric ulcer; it may also simulate duodenal ulcer. Other conditions which may give rise to symptoms pointing to the gall-bladder are (1) enteroptosis with dislocation of the right kidney; (2) hyperchlorhydria; and (3) sensory intestinal neuroses. Unless there is jaundice it is seldom possible to determine with certainty that the gall-bladder is affected, but given symptoms of biliary colic it is usually sufficient to localise the disease in the

liver. For this purpose certain areas of tenderness are important, and the writer, from many years experience, lays stress on the following:

(1) The lower edge of the liver may be diffusely tender. The tenderness may be most marked in or limited to the region of the gall-bladder, but is not necessarily so. The lower edge of the liver is usually diffusely tender during an acute attack, and is then often palpable, the region of the gall-bladder is tender in the intervals. If the gall-bladder can be felt the tenderness is usually more or less limited to it.

(2) A little known and somewhat rare symptom is subcostal hepatic tenderness. It may be present—usually in acute attacks of cholelithiasis—over the whole area of liver dulness, or be limited to its lower part.

(3) Least recognised as a symptom of cholelithiasis is tenderness over the posterior surface of the liver. When well-marked it extends laterally from ½ in. internal to the spines of the vertebræ to the axillary line, and vertically from the eleventh dorsal to the first lumbar spines. To demonstrate it the finger should be pressed against a point to the inner side of the tenth dorsal spine, then against successive points in a line running horizontally outwards opposite the other spinous processes down to the first lumbar spine, first on one side then on the other. It is then evident which side is the more tender. This symptom, if present during the acute attack, is also invariably present in the intervals, that is, if once present is always present, and is therefore of special diagnostic value in the latent stages. Occasionally it may be found years after the last attack of colic. Conversely, if absent in the acute attack, it is not found in the intervals. It is usually sufficient to map out the areas of tenderness with the finger, but when there is a doubt as to whether the right side is the more tender, greater accuracy may be obtained with the faradic or galvanic current. When, as often occurs, the lower edge of the liver and the gall-bladder are not tender, the discovery of the second or third area of tenderness may, in conjunction with other

symptoms, often decide the diagnosis. The presence of one or more of these areas indicates also that though no attack of colic may have occurred for some time, the patient still requires supervision and treatment.

The treatment of cholelithiasis should not be confined to the attack. As a prophylactic, in the intervals, the patient should take 200 to 300 gm. of Carlsbad water daily, if necessary for as long as 3 months. The diet should include substances which tend to prevent constipation, such as sugar and acids. A fattening or constipating diet should be avoided. Food should never be taken late at night, for most attacks of biliary colic occur at night after a hearty supper. Women should remove, or at least loosen, their stays immediately after food. If hepatitis is present hydropathic compresses should be applied nightly, if necessary, during weeks or months. It is also well for the patient to respire deeply for 10 minutes thrice daily. By these means the disease may frequently be kept in a latent stage for years. Massage, which is often ordered for the constipation, is contraindicated.

Framboesia, Verruga Peruviana, and "Bubas."—Max Glogner (Virchow's *Archiv*, Bd. 168, Hft. 3, p. 443).—The descriptions of frambœsia, which is known as "parangi" in Ceylon, and "yaws" in the British Colonies, given by English and Dutch physicians agree sufficiently closely to justify the conclusion that by whatever local name it may be known the disease as it occurs in the West Indies, British India, the Malay Archipelago, especially in Java and the Moluccas, and the Pacific islands is identical, and the writer's personal observations have confirmed this view. It also occurs in Africa and Madagascar. Framboesia is a cutaneous affection, which usually produces no general symptoms, though rarely there may be pyrexia or neuralgia. The eruption begins as small papules, which

slowly increase in size, coalesce, and form patches from the size of a pea to that of a two-shilling piece or larger, and are raised 1 or 2 mm. above the surface of the skin. In white races the papules and the neighbouring skin are reddened. The seats of election are the face, especially round the mouth and nostrils, and the neck, but any part of the body may be affected. More rarely they may occur on the mucous membranes of the mouth, the eyes, and the nose. Later the epidermis over the papules necroses and becomes converted into a dirty, greyish-yellow, occasionally malodourous crust. When this is removed, reddish, raspberry-like excrescences are exposed. The disease is more common in children than adults. In the course of months or it may be years the papules atrophy, leaving behind a spot, which in coloured races is at first deeply pigmented. Later the pigment is absorbed and a white patch remains. Unless the papules become infected secondarily with pyogenic organisms a cicatrix never results. The histological changes consist in a moderate thickening of the epidermis, the interpapillary processes being abnormally wide and long, and a great proliferation of the fixed cells of the dermis which is abnormally vascular, and of the endothelium of the lymphatics. In the larger tumours there may be an exudation of leucocytes, which is probably a secondary inflammatory process. Hence the tumours belong to the group of granulomata. There is general leucocytosis due to an increase in the lymphocytes. The writer failed to find bacteria in the tumours, though these have been described by others and considered to be the exciting cause. True frambœsia has probably never been experimentally produced by inoculation.

Many authorities consider that "verruca Peruviana" is a severe form of frambœsia peculiar to Peru. The symptoms, however, are so different that their identity is extremely doubtful. In "verruca" the prodromal symptoms, which consist in vertigo, headache, and stiffness of the limbs, are usually ushered in by a rigor. Vomit-

ing, coated tongue, diarrhoea, and hæmorrhages both from the nose and the cutaneous tumours frequently occur. In the most severe cases there are delirium and coma. Pyrexia usually precedes the eruption and in favourable cases subsides on its appearance. The two may, however, appear simultaneously, or there may be no pyrexia until the eruption is established. The pulse rises to 120 or 140, even when the temperature is normal, respiration is accelerated, and there is often jaundice. Great anæmia is constant. The liver, spleen, lymphatic glands, intestinal follicles, and Peyer's patches are often enlarged. Two varieties are described, *verruca miliaris* and *miliaris*. In both, small red cutaneous nodules, which are surrounded by a red areola appear. In the miliary form these never exceed a pea in size and occur on the mucous membranes of the stomach, intestine, and trachea as well as on the skin and in the substances of the solid viscera. In the other form the nodules are very vascular and become large and boil-like; if they rupture fatal hæmorrhage may occur. The symptoms are those of a septic disease. Histologically the tumours are formed of an inflammatory infiltration of all the layers of the skin, which are atrophied, by mononuclear and multinuclear leucocytes.

The disease known in Brazil as "bubas" has by some also been identified with frambœsia. Red spots appear on the skin, the mucous membranes of the eyes, nose, lips, tongue, palate, pharynx, larynx, and trachea, and form hard infiltrated papules which subsequently ulcerate. On the skin bullæ appear, which rupture and become covered with crusts, and invariably leave cicatrices. It is probably a distinct disease, but the writer has no personal experience of it.

Infantile Alcoholism. — J. Roubinovitch (*Gazette des Hôpitaux*, June 14, p. 661).—Two forms of infantile alcoholism may be recognised—hereditary and acquired. Not infrequently

they are combined. The hereditary form develops during foetal life at any period from conception to birth. The factors in hereditary alcoholism are confirmed alcoholism in the parents, and the age of the foetus. The former is the chief factor. Probably a direct toxic action is exercised by alcohol on the reproductive elements. Testicular atrophy has been observed, and in women addicted to alcohol menstruation ceases prematurely and the ovaries atrophy. A child born under these circumstances is a product of parents whose reproductive organs have suffered from chronic alcoholism but is not a hereditary alcoholic in the proper sense of the word.

The subjects of hereditary alcoholism have symptoms from birth. Their general constitution is feeble, they lack resistive power to infection. They succumb easily to gastro-enteritis, bronchitis, meningitis, etc. Some writers think that in large commercial and industrial centres 50 per cent. of the children die before the end of the third year, and convulsions is one of the most frequent causes. Parental alcoholism is the dominating cause of the enormous infantile mortality among the working classes of Russia, Belgium, and France. Those who survive the first few years of life generally show some marked defect—symptoms of digestive, respiratory, or nervous disorders with consequent liability to some forms of disease, such as tuberculosis or meningitis. In some cases of hereditary alcoholism the more common characteristics of alcoholism may manifest themselves in the child, such as tremor and increased mucous secretion. Later in life, hysteria, neurasthenia, epilepsy, and chorea are very prevalent. In regard to epilepsy, Bournville has observed that in 163 families in which either the father or the mother was addicted to alcohol 244 children suffered from epilepsy, and Kovalewski has noted 100 epileptics in 60 families. Various forms of mental disease such as imbecility, idiotcy, feeble intellect and memory, are very common and even some forms

of gross cerebral disease such as malformations, hydrocephalus, microcephalus, etc., are observed. Later some of the more marked forms of mental disease such as melancholia and mania may be expected. The most common mental characteristics of such children are feeble memory, inability to learn, and a certain want of perception of the ordinary duties of life. A girl, aged 15, the child of alcoholic parents, could not go from one room to another to fetch some object without forgetting what she was sent for. Sleep is generally troubled by nightmare, dreams, night terrors, etc. According to Morel idiotcy does not appear till about the 3rd or 4th year. In one case a drunken father had 7 idiotic children. Dipsomania, as may be expected, is extremely likely to appear even at an early age. Thus the hereditary alcoholic becomes a drunkard. In such children juvenile crime is prevalent. In Switzerland, according to the investigations of the Federal Council half of the children detained in houses of correction are the issue of alcoholic parents.

The most frequent source of acquired alcoholism is lactation. Alcohol is conveyed to the infant with the milk in proportion to the amount taken. The researches of Klingemann, Roemann and Nicloux have shown that alcohol passes into the milk whatever be the quantity consumed. According to Vallin it is common in Paris to give nursing women a litre or more of wine, often of the stronger and more generous kind. Not infrequently in addition an unlimited amount of beer is given. It is supposed that alcoholic beverages consumed by the nurse impart strength and vigour to the infant, whereas the opposite is the case. In several countries—Belgium, Russia and parts of France—it is the custom to soothe the cries of infants by giving them a piece of sugar steeped in Kirch, Eau de Vie, or gin, and tied up in a piece of rag which they can suck. Sometimes a piece of bread or biscuit steeped in some form of alcohol is given in the same manner. In some parts the mothers give the children a teaspoonful of "grog"

to put them to sleep. Wine is regarded as beneficial during dentition and in some parts of Austria it is regarded as indispensable for teething children. The least indisposition, cold, colic, or headache is regarded by some as calling for alcohol. One source of infantile alcoholism is the consumption of fruit preserved in brandy, a favourite commodity in the towns and villages of France. The onset of puberty is sometimes signalled by dipsomania which in some instances becomes chronic. The writer has observed this in both boys and girls; in the latter the tendency sometimes disappears when menstruation has become established but is apt to return at the menopause. The custom of giving boys wine or spirits is common in certain classes and is a frequent source of early alcoholism.

The symptoms of acquired infantile alcoholism differ from those of the adult in the greater intensity of the toxic effect, especially on the nervous system. In the infant the alcoholism may be acute or chronic. The acute is most usually characterised by epileptiform convulsions. A breast-fed child, aged $2\frac{1}{2}$ months was restless, and had intercurrent attacks of generalised convulsions. The mother took morning glasses of "schnaps" daily. She was ordered to take the child from the breast and to feed it on cow's milk. In a few days the convulsions ceased. The child was again put to the breast and the convulsions recurred immediately. The child was weaned and there was no further trouble. Generally, convulsive attacks of alcoholic origin can be distinguished from ordinary forms of infantile eclampsia by the absence of pyrexia and intestinal troubles. Sometimes the acute alcoholism of infants resembles meningitis. The writer quotes the case of a child, aged $2\frac{1}{2}$ months, with stiffness of the neck, intermittent pulse, deep respiration, vomiting, hydrocephalic cry, etc. The wet nurse happened to leave and it was ascertained that she drank heavily and was intoxicated every night. The meningitic symptoms disappeared. Lastly, infants may manifest acute alcoholism in the form of simple drunkenness.

Chronic alcoholism is generally characterised by tremor, restlessness, crying, loss of sleep, and of weight, all of which symptoms vary in degree according to the amount of intoxication. In some cases insomnia is absolute and in these convulsions are liable to appear accompanied by strabismus. Gastro-intestinal disorders occupy an important place among the symptoms, acute or chronic gastro-enteritis may occur and cause marasmus. Polymorphous erythema is a common symptom. Boils and impetigo also occur. Maran has divided disorders of nutrition due to alcoholism into 2 periods. The first is characterised by nervous symptoms without digestive disturbance or alteration of temperature; the infant is soft and flabby sometimes unduly fat. The second period is that of malnutrition as above described, ending in athrepsia. These nutritive disorders undermine the child's constitution to such an extent that it becomes liable to various infective conditions. In the child a few years old acute and chronic alcoholism occur. In the former the symptoms are of the usual kind—excitation, incoordination, and in severe cases coma, the latter coming on more rapidly than in the adult; in fact in some cases constituting the only symptom. In bad cases epileptiform convulsions supervene and the child dies in a few hours. These symptoms are much more marked in the case of children of neuropathic heredity than in others. In such, small doses of alcohol are apt to cause great excitement, disorder of movements, shouting, and even maniacal symptoms with possibly acts of violence. In one case a child attempted to throw his little brother underneath the wheels of a tramcar. The depressed form of drunkenness is rare in children and is liable to be accompanied by suicidal tendency. Chronic alcoholism in the child is characterised for the most part by the same symptoms as in the adult, except that those attributable to the nervous system are much more marked. Thus, nightmare, sensory and motor disturbances,

night-terrors, etc., are prominent symptoms and when they persist should always raise a suspicion of alcoholism. Weakness of intellect and the appearance of convulsions in a child of 5 or 6 years of age are suggestive of alcoholism. Impetigo, eczema, and prurigo are met with in such cases. Growth is retarded and nutrition is poor. Thus a girl whose parents were confirmed alcoholics had consumed daily half a litre of wine since the age of 3 years. At 13 she had ascites and other symptoms of hepatic cirrhosis. Her appearance was that of a child of 8 or 9 and her development in every respect was below normal. In another case a child of 14, whose father and mother were confirmed drunkards, consumed daily from a half to a litre of wine since the age of 2. After 7, Chartreuse and other liquors were also taken. At 14 she had the appearance of a child of 5 or 6, the limbs, especially the legs, were small and the intelligence defective. The effect of alcohol on growth has been investigated experimentally by Frick. To puppies he administered alcohol daily. They showed marked retardation of development compared with others of the same litter, and some had epileptiform attacks and died. The pathology of infantile alcoholism does not offer any special features, the organs being affected as in ordinary cases.

PROGNOSIS.—According to Morel hereditary alcoholism presents different degrees of gravity. The first generation if placed under favourable circumstances seem capable of improvement and satisfactory results may be expected provided every care is taken, but the children of the second generation are almost certainly incapable. The prognosis of acquired infantile alcoholism is variable, depending upon the acute or chronic character of the intoxication and the means which can be employed to obviate the habit. The danger in such cases is of some intercurrent condition, such as tuberculosis and the many neuropathic accidents described above.

TREATMENT.—Independently of state regulation of the sale of alcohol, especially to children,

much may be done by the careful instruction of parents and by every effort to correct the widespread erroneous idea that alcohol is beneficial to children and that the nursing mother requires to take it in some form. It is important to instruct newly-married people as to the evil results of indulgence in alcohol. Mothers addicted to alcohol should not nurse their children, and in the upper classes a non-alcoholic wet nurse should be obtained. No child should be given alcohol in any form before the age of 10. From 10 to 20 light wine with water has not necessarily any bad results, but it is unnecessary. Irritable, nervous children, especially those with neuro-pathic tendencies, should be total abstainers. In all cases of mental enfeeblement total abstinence offers the best chance of amelioration.

Hydatid Cysts of the Lung.—Dieulafoy (*Jour. de Med. et de Chirurg. Prat.*, June 10, p. 414).—A man, aged 40, enjoyed good health until 1897, when he was seized with pain in the side which was thought to be pleuritic. Hæmoptysis followed at intervals for about 3 weeks, frothy and rusty blood being expectorated. In the autumn of the same year the hæmoptysis recurred in considerable quantities, and for several weeks he complained of cough and loss of weight. Hæmoptysis recurred with increasing frequency and many of the symptoms pointed to rapid phthisis, although there were no localising signs in the lungs. Seventeen months after the first attack of hæmoptysis the patient expectorated hydatid material. From this time hydatids were frequently coughed up, and the hæmoptysis continued. A year later the expectoration became purulent, showing that suppuration of the cyst was taking place. In the intervals between the hæmoptyses the patient's condition improved. Hydatid membrane was expectorated on 42 occasions, always after hæmoptysis.

When he came under observation in Nov., 1899, the question was whether the hydatid cyst

was in the lung or the liver. Against its being in the liver was the fact that at no time had the patient expectorated bile, which almost invariably occurs when there is communication between the liver and the lung. Further, hydatid cysts in the liver are not accompanied by hæmoptysis except at the time that such communication is formed. There was a history of hæmoptysis extending over 17 months, each attack being followed by expectoration of hydatid membrane. The lung, in contrast to the liver, is extremely intolerant of hydatids, and hæmoptysis, as pointed out by Trousseau, is one of the most constant symptoms. Probably many unexplained cases of hæmoptysis are due to hydatids of the lung, as hæmoptysis is an early symptom and occurs long before the existence of physical signs or the expectoration of anything that would enable the diagnosis of hydatid cysts to be made. In some instances pleurisy takes the place of hæmoptysis as an early sign. Pleurisy, both dry and with effusion, is also an early sign of hydatid of the liver. In pleurisy with effusion due to hydatid of the lung the diagnosis may be extremely difficult. On the other hand a large cyst may simulate pleuritic effusion very closely. Some cases of hydatid cyst may remain entirely latent. Pulmonary hydatids may die, the liquid may become absorbed, the remaining mass may undergo calcareous and fatty infiltration. The usual course, however, is for the cyst to perforate either into a bronchus or the pleural cavity, the latter being the most dangerous event. When perforation occurs into a bronchus there are sudden dyspnoea and violent cough, and clear characteristic fluid with more or less membrane is expectorated. Expectoration of hydatid material may then continue for a period of months accompanied by hæmoptysis. The patient may die, or, after passing through a condition of exhaustion, recover. In some cases of pulmonary hydatids symptoms of pneumonia supervene, and may bring about absorption of the cyst. Hydatids may be primarily pleural but in most cases the cyst originates

in the lung, and the pleura is secondarily involved. Sometimes the cyst first ruptures into bronchus, and subsequently gains the pleural cavity, and then pyopneumothorax is rapidly established.

The treatment is more or less expectant, being directed towards the control of the hæmoptysis. Surgical intervention can seldom be of much use, for when the cyst empties itself there is no need to interfere, and in other cases the localisation may be too difficult to warrant exploration. In some cases of pleural hydatids causing bulging of the thoracic wall to such an extent as to suggest a tumour exploratory puncture, even if performed with the greatest care, may be followed by dangerous symptoms, and even by a fatal termination. The cases which chiefly call for surgical interference are those in which the cyst has ruptured into the pleural cavity.

The Anæmic Form of Gastric Cancer.—

P. Menetrier and Chas. Aubertin (*Archives Générales de Méd.*, June, p. 658).—Under the title of "The Anæmic Form of Gastric Cancer" a variety of malignant disease of the stomach has been described. It has special symptoms in addition to those of carcinoma. The diagnosis cannot be made without careful examination of the blood and of the gastric juice. The symptoms so closely resemble those of pernicious anæmia that an error in diagnosis is liable to be made unless all the points are carefully considered. The following case is an example:

A carter, aged 43, was admitted to hospital in Nov., 1901, complaining of loss of weight and general weakness. The family and previous history were unimportant. For about 5 or 6 months he had been losing strength and weight. The digestive functions were little affected. There was never any vomiting and with the exception of some distaste for fatty food the diet was taken as usual.

He was so weak that he could not leave his bed. He was very pale but had not a lemon yellow tint. The mucous membranes were very pallid and the conjunctivæ almost white. Food of all kinds was taken without difficulty and the usual articles of diet were tolerated. Repeated examination of the abdomen failed to reveal any tumour or dilatation of the stomach. Examination of the blood showed red blood corpuscles 1,476,000, white 9,300. The latter were composed of polymorphonuclears, 49·44 per cent., mononuclears, 42·22, and lymphocytes 8·33. No nucleated red cells were present. Hydrochloric acid was completely absent from the gastric juice. Notwithstanding that the character of the blood differed from that usually met with in malignant disease, carcinoma of the stomach was diagnosed. One month after admission there was slight hæmatemesis. Simple vomiting occurred at times. A second examination of the blood one month later gave red blood corpuscles, 1,333,000; white blood corpuscles, 11,780; polynuclears, 57·77; mononuclears, 31·43; large mononuclears, 6·34; lymphocytes, 4·49. Thus there was an increase of the anæmia and the percentage of white corpuscles was higher. Death occurred on Jan. 6, 1902.

NECROPSY.—The organs were all markedly anæmic, the stomach was slightly dilated. There was a large nodular and ulcerated growth of the pylorus surrounding its orifice but no obstruction. All along the lesser curvature and at the lower part of the œsophagus were enlarged glands. There were no secondary growths in any of the other organs. Microscopic examination showed that the growth was a typical form of epithelioma. In the centre the cells were very voluminous and irregular in shape. The increase in some of them was also very large almost completely filling the cells. The cells were contained in stroma of recent connective tissue. Many were filled with droplets of fluid. The characters therefore suggested encephaloid cancer. At the periphery of the tumour

the alveoli were more marked, being formed of connective tissue rather more abundant. The cells here were cylindrical with an elongated nucleus. Similar characters were present in the glands showing secondary infiltration.

The writers considered the case typical of this malignant disease. Firstly the growth was pyloric. Latent gastric carcinoma is generally diffuse or else affects the lesser curvature. On the contrary pyloric cancer generally reveals its presence by causing stenosis. In this case the obstructive symptoms were absent, the pyloric orifice being quite patent though a certain amount of dilatation of the stomach bore evidence to gastric stasis. A point of still greater interest was that gastric digestion seemed unaffected, notwithstanding the absence of hydrochloric acid from the juice. Increased pancreatic digestion may have compensated for deficient gastric digestion. The leucocytosis in this case was somewhat less than is usual in malignant disease. Leucocytosis in cancer is generally of the polymorphonuclear variety, though according to some it may affect the mononuclear. In the present case there was great increase of mononuclears both small and large. The writers are inclined to regard those mononuclears as evidence of increased action on the part of the bone marrow rather than of the glands, as has been suggested. Examination of the bone marrow showed considerable proliferation of the cells with numerous transition forms between mono- and polynuclears.

The anæmia seems to be due to the destruction of the red blood corpuscles and therefore hæmolytic. It has been suggested by Bard and Milian (*Soc. Anat.*, 1901) that the hæmorrhagic fluids associated with peritoneal and pleuritic growths have hæmolytic properties. It has been found further by Camus and Pagniez (*Thèse de Paris*, 1902), that the serum of malignant growths (cancer) has marked hæmolytic properties especially in subjects of the disease. The marked anæmia in some cases of gastric carcinoma has been thought to be due to

hæmolytic compounds secreted by the growth and are more readily absorbed when formed in the stomach. Menetriez and Aubertin further suggest that the characters of the cells have some considerable influence if, as in the cases quoted, cancerous cells seem to retain marked secretory activity. It is possible that an abundant hæmolytic fluid may be formed and rapidly absorbed from the stomach. If so, probably, many of the general symptoms of gastric carcinoma depend on the particular characters of the cells of the growth.

Accidents During Lumbar Puncture and Methods of Avoiding Them.—G. Milian (*Semaine Méd.*, June 18, p. 201).—Such complete silence has been preserved regarding the accidents of lumbar puncture that many will be surprised to learn that simple puncture without the injection of any substance is attended with the risk of immediate and remote ill effects. Under immediate accidents may be classed vertigo, faintness, syncope, apoplectic shock, and sudden death. While the fluid is passing along the needle the patient may complain of flashes of light or ringing in the ears, or syncope may occur. The writer observed a case of true apoplectic shock :—

A man, aged 24, complained of total impotence with occasional incontinence of urine. The patellar reflexes were absent, and there were numerous neurasthenic symptoms. Lumbar puncture was performed while he was seated astride on a chair. Four cc. of fluid were removed without aspiration. The needle was hardly withdrawn when he became giddy and pale, and fell backwards off the chair uttering a hoarse cry. He remained unconscious for 4 or 5 minutes, the breathing was stertorous, and the features were convulsed. He gradually regained consciousness, appeared stupid, and asked what had happened. He left in a carriage an hour later, but for 8 days he complained of nausea, vertigo, and headache.

The writer has not seen a fatal case, but deaths immediately or a few hours after puncture have been recorded by Fürbringer, Lichteim, Krönig, etc. This is not to be wondered at as the Germans withdraw from 100 to 150 cc. of fluid and reduce the intra-spinal pressure from 420 to 180 mm.

As to subsequent ill effects, the first day usually passes well; some symptoms of the disease such as headache may be ameliorated. Next day there is invariably severe headache, which each hour becomes worse. At the end of 3 days it is at its worst, and the patient fears he is going mad. Sleep is impossible, he lies on the back with the clothes pulled over his face to avoid light. All movement, and particularly standing, increases the pain. After the third day the headache gradually decreases, and it disappears on the sixth or seventh day. Vomiting resembling that of cerebral cases is often present. The pulse increases in rapidity, and is frequently irregular. The temperature may rise to 100° or 101°. Vertigo and syncope are not rare. In women these symptoms added to those of hysteria may be mistaken for meningitis.

A woman, aged 26, had acquired syphilis a year previously, and suffered from headache. Only 7 cc. of cerebro-spinal fluid were removed. Next morning there were severe headache, vertigo, and incessant vomiting; the pulse was rapid and thready. Fatal syncope seemed imminent. She recovered in a week.

A youth, aged 18, had been subject to convulsive fits for some months. Hysteria seemed to be a predisposing cause. He came to hospital for a few hours, and submitted to lumbar puncture. The fluid obtained contained no cells. He returned to work. Next morning while at work headache, vomiting, and vertigo became so severe that he was obliged to take to bed for 5 days.

These symptoms strongly resemble those observed after injection of cocaine. The writer considers that they are due not to the cocaine, nor, as Guinard has thought, to the

water in which it is dissolved disturbing the osmotic equilibrium of the cerebro-spinal fluid, but simply to the puncture.

Certain pathological conditions such as fracture of the skull, meningitis, cerebral hæmorrhage, etc., modify the ill effects of lumbar puncture—those associated with a severe cerebral lesion. In all of these puncture has a remedial effect, though some of the symptoms may be increased. General paralytics and tabetics are singularly insensible to the withdrawal of several cc. of cerebro-spinal fluid. There is a cerebral analgesia comparable to the testicular or tracheal analgesia. Patients with increased tension of the cerebro-spinal fluid tolerate lumbar puncture better than others; accidents being less frequent and less severe. In those on the contrary with normal or diminished tension accidents are the rule. Their gravity is proportionate to the quantity of liquid withdrawn, and to the rapidity with which it has escaped, especially when aspiration with a syringe has been used to accelerate a tardy flow of fluid; such aspiration had been employed in the case of the young woman mentioned above, who developed symptoms of meningitis. Disturbances in the equilibrium of the osmotic tension, and in the pressure of the cerebro-spinal fluid are the chief factors producing the accidents which have been enumerated. This explains the good results obtained by Guinard who first withdrew a certain quantity of cerebro-spinal fluid, and then used it as a vehicle for the cocaine which he subsequently injected (*Semaine Méd.*, 1901, p. 227).

The following precautions should be taken when lumbar puncture is performed:—(1) Allow the fluid to flow spontaneously and never aspirate, except the first few drops when necessary to start the flow, after this the fluid should flow through the hollow needle. This should be of small calibre, so that the stream should not be large, on this account the trochar should not be used; (2) do not withdraw more than 1 or 2 cc. of cerebro-spinal fluid, this quantity is amply

sufficient for bacteriological or other examination ; (3) stop the operation on the least complaint of the patient ; (4) keep the patient lying down for 3 or 4 hours after puncture. These precautions will usually prevent serious accidents, but there is almost always slight headache. The treatment of accidents consists in rest in bed in the dorsal decubitus position in slight cases, and in serious ones in an inclined position with the head lower than the feet, together with injections of ether and caffeine.

The Occurrence of the Typhoid Bacillus in the Sputum.—L. Jehle (*Wien. Klin. Woch.*, Feb. 27, p. 232).—In cases of typhoid fever complicated by pneumonia the typhoid bacillus may frequently be found in the sputum, and, post mortem, in the pulmonary exudation. The sputum is rusty, corresponding to the hæmorrhagic character of the pneumonic infiltration. The typhoid bacillus may be present in pure culture or mingled with other organisms, most often the influenza bacillus. That the typhoid bacillus may also occur in the muco-purulent sputum of the simple bronchitis which commonly complicates typhoid fever has not been recognised, though the writer has found them repeatedly. The following 3 cases are of special interest:—

CASE 1.—There was double hæmorrhagic lobular pneumonia with secondary double hæmorrhagic pleurisy. Post mortem no characteristic intestinal lesions were found, although the disease had existed for 3 weeks. The lymphatics of the lower end of the ileum were somewhat enlarged. The mesenteric glands were enlarged and the spleen was swollen and soft. No bacteriological examination of the intes-

tinal contents or of the spleen was made. The deeper layer of the intestinal mucosa and the mesenteric glands contained crowds of bacilli which did not stain by Gram's method. The pneumonic and pleural exudation contained influenza and typhoid bacilli, of both of which pure cultures were obtained. Although a primary intestinal infection could not be excluded with certainty as bacilli were present in the mesenteric glands, a primary localisation of the typhoid bacillus in the lungs was the probable explanation of the case.

CASE 2.—At the necropsy the typhoid ulcers in the intestine had healed completely, but there was recent hæmorrhagic pneumonia, in the exudation of which were numerous typhoid bacilli.

CASE 3.—The patient apparently recovered from an attack of typhoid fever, and had been convalescent for 2 months, when purulent cholangitis appeared and was rapidly fatal. The pus of the multiple hepatic abscesses and the exudation in the lungs contained pure cultures of the typhoid bacillus.

The last 2 cases confirm the observation that virulent typhoid bacilli may remain in the organism long after the disappearance of acute symptoms, and may be the cause of renewed disturbances. The practical conclusion to be drawn from the frequent presence of typhoid bacilli in the sputum, is that the inhalation of dried infected sputum might produce primary typhoid pneumonia, or ordinary typhoid fever if the dried dust were swallowed with the saliva. The sputum of typhoid patients should therefore be systematically disinfected not only during the acute stage but long after convalescence is established, for, even then, like the urine, it may contain virulent bacilli

THERAPEUTICS.

Treatment of Malignant Disease by Electric Currents of High Potential and Frequency.—James Allan, M.B., C.M. (*West London Med. Jour.*, July, p. 173).

CASE 1.—A woman, aged 48, was operated upon in Aug., 1899, for spindle celled sarcoma of the antrum which invaded the nasal cavity. Recurrence took place, and in Aug., 1900, growth was removed under cocaine. In July, 1901, there was further recurrence with much dragging pain, which prevented sleep. She was advised that a serious operation was necessary. As her sister had died 2 years previously after a similar operation she declined. The growth was easily seen in the nasal passages; the patient looked very ill, and complained of much pain. The current was applied by means of a small condensor electrode passed into the nostril for sittings of 15 minutes, using a primary energy of 5 ampères. After the second application the pain began to subside, and the growth to diminish. The patient felt better and slept well. After 15 sittings the visible growth had disappeared, and the pain had ceased. There has since been no recurrence.

CASE 2.—A woman, aged 37, had cancer in the right breast. In Nov., 1901, the breast was removed and the axilla cleared out. A bad prognosis was given. Three weeks after the operation the high frequency treatment was begun locally by the unipolar method, using a primary energy of 5 ampères. The patient's weight was then 9st. 9lb. Appetite speedily returned, and the patient felt much better. There is no sign of recurrence now, 4 months after the operation, and the patient is in good health. She has had 30 applications, each of 10 minutes. Her weight is now 10st. 1lb.

CASE 3.—A woman, aged 63, on Aug. 27, 1901, had her left breast excised for scirrhus. Two months later signs of recurrence

began. The supra-clavicular glands became painful, with much induration along the cicatrix and tenderness in the axilla. The unipolar treatment was applied locally for sittings of 15 minutes, using a primary energy of $3\frac{1}{2}$ ampères. After the fourth application the pain began to subside and the hard indurated parts to soften. The general condition improved rapidly, sleep returned, and the appetite was described as ravenous. After 28 applications all trace of the recurrence had disappeared.

CASE 4.—A woman with epithelioma of the cervix came under care on Nov. 8, 1901, after her case had been pronounced hopeless. She was known to have had the disease for 11 months. The case was too far advanced for operation. The cervix was completely involved. The patient was thin and emaciated, weighing 6st. 5lb. and looking very ill. As the case was desperate the method was pushed much further than ever before, and from 40 to 60 minutes' treatment was given daily, using a primary energy of $5\frac{1}{2}$ ampères. A unipolar or condensor electrode was passed into the vagina and made to impinge against the growth. This speedily wrought its way through the friable tissues of the cervix. Now the instrument passes freely into the uterine cavity. The treatment was continued daily until Jan. 2, 1902, when a severe reaction occurred. The patient had several rigors and became very ill, and for several days hung between life and death. She gradually recovered, and the treatment was resumed on Jan. 26. After the first week's treatment signs of improvement became evident. The pain and discharge decreased. The patient slept well, and the appetite improved. The local condition did not alter much. At present the growth seems to be entirely arrested. The patient feels comfortable and looks well. Her weight has increased from 6st. 5lb. to 7st. 10lb.

The apparatus used was a 12-inch coil, with mercury jet interruptor, working from the house main at a pressure of 210 volts, with a d'Arsonval-Oudin high frequency apparatus, supplied by Messrs. Isenthal & Co., Mortimer Street. Time is required to prove whether the results are cures. However, it seems reasonable that if there should be recurrence a further application will again arrest the growth. The subject is of great interest, and will well repay study. Much more investigation and careful observations are wanted.

Treatment of Pleurisy with Effusion.—

Dr. Hector Mackenzie (*Clinical Jour.*, July 9, p. 183).—Fresh air and good food are very important. How slowly medical practice alters is shown by the fact that blistering, leeching, cupping, and the administration of antimony and calomel are still recommended in the early stage. This so-called vigorous treatment is only calculated to prolong the illness and to predispose to complications. If you look upon cold as the cause of pleurisy with effusion, no doubt you will shut your patient up in a warm room, close the windows and door, and make every effort to prevent the slightest breath of air from reaching him. But if you look upon it as a tuberculous affection you will open the windows, and let the air and the sunshine in freely. Open-air methods shorten the illness, alleviate the symptoms, hasten the recovery, and diminish the risk of later tuberculous complications.

A young woman in St. Thomas's Hospital had not been progressing in the general ward. The bed was wheeled out on to the balcony overlooking the river, and she was kept there night and day. She at once felt the good effects. After 4 days the fever, which had lasted nearly 3 weeks, subsided, the appetite which had been in abeyance returned, and she rapidly recovered.

For the relief of pain in the early stage nothing is better than linseed and mustard poultices. If the pain be severe leeches may be applied, and

morphine given. A little later belladonna strapping applied to the side sometimes gives great comfort. It combines the relief afforded by the fixation with the anodyne effects of the belladonna. The cough, when painful and unattended with expectoration, should be relieved. A simple linctus, liquorice lozenges to suck, or warm milk to sip, may do all that is required. A useful remedy of recent introduction is heroin, a morphine derivative, which may be given occasionally in the form of a tablet or linctus in doses of $\frac{1}{16}$ to $\frac{1}{8}$ gr.

In cases of moderate effusion the absorption of the fluid may be helped by the application of iodine tincture or solution over the back and front of the side. Some recommend diuretics and hydragogue purgatives; but they are, as a rule, harmful, although useful enough when there is a passive effusion, the result of a failing heart. The treatment of pleurisy with effusion should be sustaining, not depleting. The ordinary drugs useful in pulmonary tuberculosis, such as creosote and guaiacol or their carbonates or valerianates, may be given. A recent guaiacol derivative, thiocol, has the advantage over the others of being freely soluble and practically tasteless. Some who are impressed with the rheumatic origin of pleurisy give salicylate of soda, but there should be clear evidence of rheumatism before doing this.

If the amount of fluid be large or the patient's breathing be embarrassed aspirate. But if the amount of the fluid be moderate aspirate only when in doubt as to its nature or when the patient is not satisfactorily progressing. Aspiration or even exploration with the needle is not altogether free from danger, and deaths during or soon after this seemingly simple operation have been recorded. A patient died shortly after exploratory puncture made in the out-patient room. An encysted collection of fluid at the left base was suspected. Two punctures were made; the first was dry, and only a little blood was removed by the second. Suddenly the patient passed a large quantity of urine, turned pale, and fell

backwards. Respiration ceased, and the heart beat rapidly and irregularly. Artificial respiration was maintained for half an hour. The patient survived for 3 days, during which he remained unconscious and had several convulsions. The necropsy showed nothing to explain the fatal termination. A similar case occurred at St. Thomas's, the patient being a child of 7. In another case, also at St. Thomas's, a child of 8 suddenly died from syncope during exploratory puncture of lung. Dr. A. E. Russell, thinks that the syncopal symptoms are due to afferent impulses conveyed along the vagus nerve to the medulla and attributes the unconsciousness and convulsions to cerebral anæmia, brought about by the extreme lowering of the blood pressure ("REVIEW," Vol. IV., p. 711). Therefore never make an exploratory puncture in the surgery or consulting room. When you explore or aspirate let the patient be recumbent, have stimulants at hand, and be ready with the hypodermic syringe to inject strychnine should there be signs of cardiac failure. Should syncope occur resort at once to artificial respiration. Another complication which has sometimes followed aspiration is pulmonary œdema, shown by the expectoration of large quantities of albuminous fluid which occurs usually about an hour after the operation (see "REVIEW," p. 332). If the fluid be of the ordinary sero-fibrinous character do not withdraw all that is possible. If a portion is withdrawn the remainder will gradually be absorbed. If you withdraw the whole the fluid sometimes rapidly reaccumulates. If the fluid reaccumulates to its former amount and the patient does not progress satisfactorily aspirate again, but do not be in too great a hurry to do so. If after a time there remains a certain residual amount of fluid, graduated exercises for the muscles of respiration sometimes are helpful in removing it.

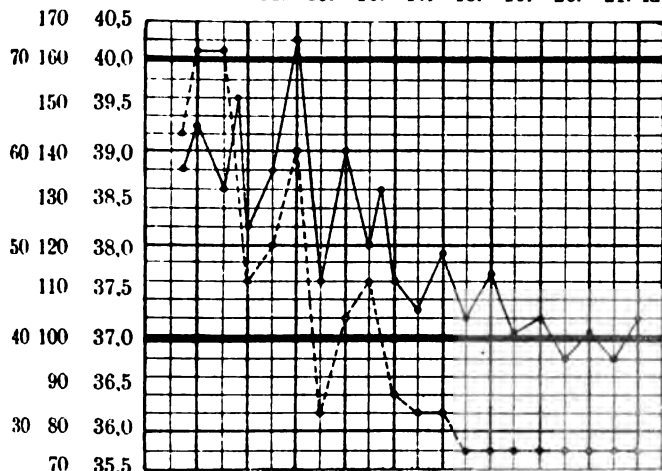
After treatment is the most important. The onus is not to prove that the disease has been tuberculous, but that it is not. Unless you

can, look upon it as tuberculous, and insist that the patient after recovery from the pleurisy goes into the country so that he may lead a healthy open-air life for 3 months. In certain cases, if he has completely recovered, a sea voyage may be very beneficial. Examine the patient from time to time, and thoroughly satisfy yourself that his health is re-established. In all doubtful cases the tuberculin test should be applied. If the patient reacts to tuberculin you can be much more emphatic in ordering rest and change. If after the test has been thoroughly and systematically applied no reaction is obtained you can give a more hopeful prognosis than you would otherwise.

Intravenous Injections of Credé's Colloid Silver in Malignant Endocarditis.—C. L. Klotz (*Deutsche Med. Woch.*, July 17, p. 524).—A woman, aged 27, had tonsillitis between Feb. 5 and 10, immediately after her child had recovered from glandular fever. On Feb. 20 pains in the limbs began, and on March 4 she took to her bed. The temperature varied between 38.3° C. and 40° C. (104° F.). On March 7 the least movement was impossible owing to the severity of the pain, and the pulse was 170 and irregular. On March 8 there was violent cardialgia, with apathy, restlessness, insomnia, and complete anorexia.

On March 12 the writer first saw the patient. There were a septic odour and great pain in the limbs and left shoulder. The temperature was 38°C., and the pulse too rapid to count. The whole of the left side of the thorax pulsated with the heart-beats which were 166 in the minute. The cardiac dulness was increased to the left and there was a systolic murmur. Tenderness prevented examination of the spleen. Septic endocarditis was diagnosed, and a bad prognosis given. On March 13, the temperature being 39.2° C. and the pulse still uncountable, 9 centigm. of a 1 per cent. solution of "collargol" (colloid silver) were injected into

R P. T. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. March



Continuous line—Temperature.
Interrupted line—Pulse.

a vein of the arm. An hour later there was a rigor and the temperature rose to 39.6° C. Two hours later, however, the temperature was falling, the pulse could be counted, and the patient was comfortable. In the evening the temperature had reached 38.2° C., the pulse 112. The pain was less, and quiet sleep was obtained. At midday on March 14, the temperature and pulse again rose, and the restlessness, foetid smell, and pain returned. At 9 p.m. a second intravenous injection of 8 centigm. of the silver solution was given. An hour later there was a rigor, with a rise of temperature to 40.2° C.; the pulse was regular and 140. Afterwards complete freedom from pain and a quiet sleep for 5 hours were obtained. The temperature next morning was 37.5° C., the pulse 84. On March 15 the temperature rose again to 39, though the pulse did not exceed 112. On March 16, though the temperature and pulse were lower, the general condition had deteriorated. At 10 a.m., therefore, a third injection of 7 centigm. of the silver solution was given. An hour later the temperature rose from 37.9° C. to 38.6° , and the pulse from 98 to 110, but there was no rigor. In the evening the general condition had greatly improved. The pulse and temperature then steadily fell, and on March 19 were

37.2° C. and 76 respectively.

Appetite returned, and on March 20 both the cardiac dulness and sounds were normal. On March 25 the patient was completely free from pain and on March 29 got up. Recovery was complete.

The writer had previously obtained good results in septic processes with inunctions of Credé's silver ointment. He employed the intravenous injections on the recommendation of Wenkebach, who obtained good results in 2 cases of malignant endocarditis.

See also "Silver as an Antiseptic," "REVIEW," Vol. III., p. 467.

Intravenous Oxygen Injections. — Prof. G. Gaertner (*Wien. Klin. Woch.*, July 10, p. 727) records 9 experiments on dogs, which prove that pure oxygen, provided the rate of introduction be moderate, may enter the veins without the production of any symptoms. It is, therefore, an exception among gases, which usually produce gas-embolism and death. The gas was conducted from a gasometer through a small wash-bottle to a fine stop-cock which was connected by a rubber tube with a glass cannula. Before use a rapid stream of oxygen was passed through the apparatus to expel the air. The gas was injected into the external jugular vein. Oxygen, like air, produces a loud, splashing, or gurgling cardiac murmur. If the entry of oxygen was slow the murmur could only be heard with a stethoscope or the ear applied directly to the thorax. If the stream was more rapid it could be heard some way off; if still more rapid at a great distance. Its intensity was of prognostic importance, there being no danger to the animal, if the murmur was inaudible at a distance of more than about $\frac{1}{2}$ metre. Danger could always be averted and the murmur suppressed by stopping the supply of oxygen. In one case 900 to 950 c.c. of oxygen were injected in the course of an hour

(about 15 c.c. per minute) without any bad effect. Larger quantities, for instance 35 c.c. per minute, caused a fall of blood-pressure and death. The right heart and the pulmonary vessels were full of bubbles. If the introduction was slower the gas was partially fixed by the red corpuscles in the veins and heart, so that the blood in the right ventricle was bright red. Bubbles were, however, present in the pulmonary artery, but these disappeared in their passage through the lungs, and were never seen in the left ventricle. The bubbles of oxygen in the lung appeared to have no bad effect, since no fall of blood-pressure occurred unless oxygen was injected so rapidly that it could not be absorbed. In death from the entry of air into veins the bubbles of gas which form the embolus consist almost entirely of nitrogen, which acts as a foreign body. That the harmlessness of oxygen depends on the capacity of the red corpuscles to absorb it appeared to be proved by an experiment in which the animal was previously poisoned by the inhalation of concentrated carbonic oxide in the form of water gas. The first attempt to resuscitate the poisoned animal by injections of oxygen succeeded. But after more carbonic oxide had entered the circulation and the hæmoglobin was saturated, the introduction of oxygen was unavailing and death occurred with the right heart full of gas. Carbonic oxide hæmoglobin is a more stable compound than oxyhæmoglobin, and oxygen when introduced into the circulation was unabsorbed. The possibility, however, of the carbonic oxide having paralysed the heart and of oxygen having afterwards entered could not be excluded. Intravenous oxygen injection can replace deficiency of oxygen in the air or temporary absence of respiration. Thus, on cutting the vagi in a curarised animal respirations cease and blood-pressure rises; oxygen injections practically prevent this asphyxial rise. Later, however, blood pressure sinks owing to cardiac paralysis from accumulation of CO_2 .

The writer concludes that intravenous injections of oxygen in man would, under certain

desperate conditions, be justifiable. Such are acute asphyxia from foreign bodies, or diphtheritic membrane, acute pneumonia, poisoning by carbonic oxide (though here great caution would be necessary), and coal gas, and especially the asphyxia of new-born children, in which if the heart is still beating, the injection should be made through the umbilical vein. In all other cases a vein of the foot or leg should be chosen. The oxygen must be pure; that ordinarily obtained in steel cylinders may contain as much as 20 per cent. of nitrogen.

Alcohol as an Application to Carbolic Acid Burns.—S. R. Blatteis, M.D. (*American Medicine*, May 17, p. 814).—A man by mistake used pure carbolic acid as a liniment to his left leg. He rubbed it in over the anterior and lateral surfaces from the crest of the ilium and Poupart's ligament to the ankle. In about 3 minutes he felt an intense burning sensation. He became dizzy and nauseated and fell on the floor. The writer was called and found him semi-comatose, with sighing respiration, small feeble pulse, and cold and clammy skin. He applied alcohol, 95 per cent., liberally over the entire burnt area, and kept cloths saturated with it in contact for about half an hour. The burnt area, instead of being intensely hyperæmic, was then pale and had a yellowish tinge. A simple ointment was applied and the entire limb bandaged. At the end of 36 hours the bandage was removed; the skin was nearly normal, no denudation had taken place. There were burnt patches on the other leg and thigh where it had come in contact with the left. As a test alcohol was not applied to these, only the ointment. The difference was striking. The intense hyperæmia persisted, a number of blebs formed, and only these patches were painful. They still required dressing. The first urine voided was almost black, smelt of carbolic acid, and contained albumin.

See also "Alcohol in Carbolic Acid Poisoning," "REVIEW," Vol. IV., p. 633.

Urotropine in Diabetes.—A. Mayer (*Med. Record*, p. 371, 1902.)—Coma in the later stages of diabetes probably results from acid intoxication, which paralyses the nerve cells of the brain. Herter has produced this condition in apes by the intravenous injection of B-oxybutyric acid. Its advent is coincident with a weak pulse, sighing respiration, acetone in the breath, hyaline casts, and increased calcium and magnesia salts in the urine. As acidity is generally present in the tissues alkalies are necessary for neutralisation. Since urotropine in acid fluids readily splits up into ammonia and formaldehyde Mayer has used it for this purpose. A man, aged 37, with a 4 years' history of diabetes, was rapidly losing weight. On Sept. 23rd he had all the symptoms of incipient coma. He was given 20 gr. of urotropine, and the dose was repeated in half-an-hour. The somnolence and cyanosis disappeared and next day he was able to go about. Hyaline casts disappeared from the urine. The urotropine was continued in small doses, but had ultimately to be abandoned on account of the nocturnal diuresis it produced. On Nov. 10th impending coma and twice subsequently coma were prevented by the same treatment. Appetite was gradually lost, and the patient became emaciated. Another attack of coma occurred on Dec. 6th. Within the next few hours the patient received 70 gr. of urotropine. Consciousness was restored, and continued until 20 hours later, when the patient died from asthenia.

Twenty minutes after its ingestion it is eliminated in the urine as salicyluric acid which gives a violet colour on the addition of perchloride of iron. This elimination ceases after 12 hours. Aspirine rapidly decomposes in the intestine but not in the stomach, is rapidly absorbed, and quickly eliminated in the urine. Its toxicity is weak.

Aspirine has been chiefly used in acute articular rheumatism, the hectic fever of tuberculosis, and several febrile pulmonary affections. It is antipyretic and analgesic. The former is its most important action. A few hours after ingestion the temperature rapidly falls. In one case it fell from 104.5° to 95.5° in 9 hours. A tuberculous patient whose temperature was 102.4° at 5 a.m. was given 3 gms. of aspirine in small doses between that hour and noon. At 3 p.m. the temperature was 97°; at 6 p.m. 97.3°; at 9 p.m. 97.5°. The fall in temperature is permanent only in acute articular rheumatism, when in 2 or 3 days it becomes normal. There is profuse perspiration which accompanies and does not prevent diuresis. The analgesic action is also only certain in acute articular rheumatism. Aspirine appears to be innocuous. Rénon gave it to 43 patients. It was well tolerated by all except 2 in whom it caused gastric pain and anorexia. These were, however, cardiac cases in which no drug was well borne. Rénon thinks that in tuberculous cases aspirine should be given with care and only in small doses on account of the perspiration which it causes. It is prescribed in doses of from 1 to 3 gm. in the day. In acute rheumatism Rénon gives 1 gm. on the day the patient is admitted to hospital, and 2 gm. on the following day. On the two following days the temperature falls and the pain disappears. The dose is then diminished, and usually stopped on the 5th or 7th day. Compared with salicylate of soda its action is more rapid and more fleeting; it is more easily absorbed, better tolerated, and rarely produces gastric disturbances or tinnitus.

The Therapeutic Properties of Aspirine.

—E. Guihal (*La Presse Méd.*, March 29, p. 305).—Aspirine is obtained by acting upon salicylic acid with acetic anhydride. At the temperature of the human body, and in an alkaline solution it splits up into its component parts, and its action is due to the salicylic acid which is thus set free.

SURGERY.

Diagnosis and Treatment of Vesical Gonorrhœa.—R. Kutner (*Berlin. Klin. Woch.*, May 12, p. 452, and May 19, p. 481).—Acute gonorrhœal cystitis is diagnosed more frequently than it occurs, owing to its being confused with acute posterior urethritis. If posterior urethritis has healed before the onset of cystitis, or if the bladder is infected through the lymphatics without implication of the posterior urethra, strangury may be absent. The symptoms of acute gonorrhœal cystitis without posterior urethritis are pyrexia, general malaise, intense turbidity of urine, and a preponderance of pus in the portion of urine passed last. If a patient with anterior urethritis micturates into 3 urine glasses, the first portion is extremely turbid and contains pus, the second portion from the posterior urethra and prostate is less turbid, and contains less pus than the first or the third. In cystitis the last contains a quantity of pus never observed in uncomplicated posterior urethritis. Thus a large amount of pus in the third specimen *plus* pyrexia and malaise justify the diagnosis of acute gonorrhœal cystitis, even in the absence of strangury.

In acute gonorrhœal cystitis the great indication is, as far as possible, to avoid instrumental interference. The gonococcus never produces alkaline decomposition, but catheterism is liable to bring this about by introducing other microbes. Rest in bed with copious draughts of diluents, such as milk and oatmeal water, the avoidance of alcohol and spices, and the temporary abandonment of urethral injections are indicated. Internally the balsams, especially oil of sandal wood, or salol, or, better, both of these, in doses of 15 gr. of the latter, and 20 drops of the former, should be taken thrice daily. No other drug, not even urotropine, can compare with salol in acute cystitis. For tenesmus infusions of *uvæ ursi*

or buchu leaves are indicated. Usually these measures effect a cure in a few days. If they fail to do so within 8 to 14 days instrumental treatment may become justifiable as soon as the urethral discharge is scanty and mucous. The best instrumental method of treating acute gonorrhœal cystitis is by irrigations without a catheter. After micturition the previously sterilised conical metal nozzle of a syringe of 100 c.c. capacity is inserted into and effectually plugs the meatus. The patient then attempts to micturate, and simultaneously the contents of the syringe are injected slowly and uniformly under moderate pressure. In a few seconds the sphincter vesicæ yields and the fluid flows into the bladder. It is retained for some minutes, and then discharged by micturition. The best application is a $\frac{1}{4}$ to $\frac{1}{2}$ per mille solution of nitrate of silver. It should be injected at first every day, then every other day.

Chronic cystitis should rarely occur if the above treatment is employed. The diagnosis is often difficult if the case is seen first in the chronic stage. Supposing turbid urine is constantly passed, the fact that at some period there has been gonorrhœa does not necessarily imply that it was the cause. If, in the male, the urine is passed into 3 glasses the specimens may be indicated by the figures, 1, 2, 3.

(i.) If 1 is more turbid (*i.e.* contains more pus) than a mixture of 2 and 3 there is severe anterior urethritis and some posterior trouble.

(ii.) If the turbidity of 1 equals or is less than that of a mixture of 2 and 3, there is slight anterior urethritis with posterior disease, or the latter alone.

(iii.) In both (i.) and (ii.) the following is true:—(a) If 3 is as turbid as 2, there is severe posterior urethritis, either alone or in conjunction with slight cystitis; (b) If 3 is more turbid than 2, there may be (b1) pos-

terior urethritis and severe cystitis, or (b2) cystitis alone, or (b3) cystitis (with or without posterior urethritis) *plus* renal suppuration (unilateral or bilateral), or (b4) renal suppuration alone.

(iv.) Uniform turbidity of 1, 2, and 3 with the absence of pus indicates febrile conditions, phosphaturia, bacteriuria, galacturia, lipuria, or chyluria.

In sections i. and ii. of this scheme disease of the urethra anterior to the membranous portion is differentiated from processes behind the triangular ligament, which may be localised in the posterior urethra, bladder, or kidneys. Under the heading iii.b. the conditions indicated by b2, b3, and b4 are usually distinguished only by the results of treatment, *i.e.*, whether the symptoms disappear under prolonged vesical irrigations. Cystoscopy, however, may dispel the doubt immediately, though occasionally catheterism of the ureters may be necessary. In women 2 equals 2 + 3 in men. Therefore: (i.) If 1 is more turbid than 2, there is severe urethritis with some posterior trouble. (ii.) If the turbidity of 1 equals or is less than that of 2, urethritis is slight or absent, but there is posterior trouble which may be either (a) cystitis alone, (b) cystitis with pyelonephritis, or (c) pyelo-nephritis alone.

If the presence of cystitis is assured the sediment obtained by centrifugalisation of the urine, which should be drawn off by a catheter after irrigation of the anterior urethra with boracic lotion, should be examined bacteriologically. As a rule it is sufficient to stain smear-preparations to distinguish cases of pure gonorrhœal cystitis from those of mixed infection with the streptococcus, staphylococcus, or bacterium coli. If these organisms are present the urine will probably be alkaline. If the urine is acid and no gonococci are found the tubercle bacillus should be searched for; according to Faltin it is the cause of 12½ per cent. of all cases of cystitis. If nothing can be learned from examination of the sediment the secretion of the prostate should be expressed and examined. Negative results do not, however, exclude gonorrhœa.

In the treatment of chronic gonorrhœal cystitis the solution of nitrate of silver employed in acute cases for irrigations without a catheter are too weak and are useful only if there is also chronic anterior urethritis. Otherwise the bladder should be irrigated daily through a sterilised elastic catheter with a ¼ per mille solution of silver nitrate, 3 injections of 50 c.c being given, and the fluid allowed to escape. The strength of the solution may be slowly increased to 1 in 1000 or even 1 in 300. If the bladder will not tolerate irrigations, or if progress is unsatisfactory, instillations of a ½ or even of a 1 or 2 per cent. solution of silver nitrate may be given every other day. A few drops are injected into the previously emptied bladder through a long catheter by means of a "drop-syringe." Silver nitrate is superior to protargol, argonin, or any of the newer preparations of silver. Sufficiently weak solutions of it, which are as effectual as stronger solutions of the latter, are not more irritating. Local treatment is aided, as in acute cases, by the internal administration of salol, or sometimes more markedly by urotropine, which is best given with citric acid.

Chronic gonorrhœal cystitis may, though rarely, take a hæmorrhagic form. This usually appears some time, even as long as 9 months, after the urethritis has disappeared. The urine is uniformly reddened, that is, there is hæmaturia. By the cystoscope deeply congested areas can be seen to be constantly oozing. The treatment is that of acute cystitis until the hæmorrhage has ceased, then that of chronic.

Cystitis is also produced by acute retention from suppurative gonorrhœal prostatitis or stricture. In the former case it is acute, in the latter chronic, but in both the urine contains flaky masses and is usually not turbid. In both the cystitis is initially due to the irritation of retained urine and not to bacteria; unless, therefore, secondary infection occurs it subsides rapidly when the cause is removed.

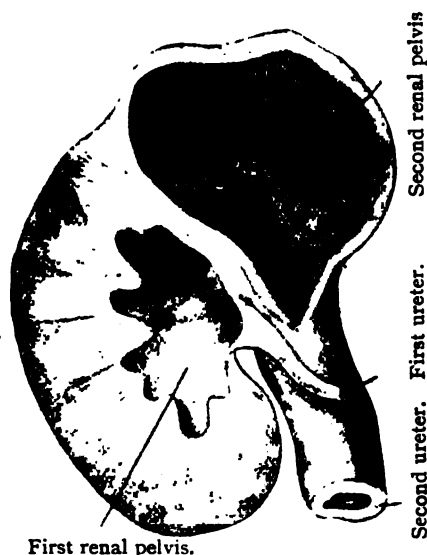
Double Left Kidney with Pyonephrosis of one of the Urinary Tracts.—E. Tschudy (*Corr.-Bl. f. Schweiz. Aerzte*, July 1, p. 400).—Bilateral or unilateral duplication of a renal pelvis and ureter is not uncommon. The clinical interest of the following case is due to the infection of one urinary tract, while the other remained healthy.

In Jan., 1898, a woman, in the fifth month of pregnancy, was seized with acute cystitis. This appeared to yield to treatment, but towards the end of Feb. severe pain appeared in the left lumbar region, and the temperature rose to 103.1°. Between the left costal arch and the crista ilii a very tender swelling appeared. There was also left pleuritic friction for a few days. Later a quantity of pus was passed in the urine, and the pyrexia, swelling, and pain slowly disappeared. Similar attacks recurred at frequent intervals, until the pyrexia became continuous, and the general condition was alarming. On May 9, in the middle of the ninth month, premature labour was induced. A healthy boy was born on May 12. The temperature then fell, and there was a normal puerperium. Two months later, however, intermittent pyuria reappeared. By cystoscopy the bladder was seen to be normal, and by catheterism of the ureters healthy urine was obtained on both sides. In the spring of 1900 the patient was examined under chloroform shortly after an attack, but nothing abnormal was discovered in the pelvic or renal organs. No further pyuria occurred until April, 1901, when the patient, then aged 25, was seized after an attack of influenza, with first intermittent, then continuous pyuria. There were great emaciation, weakness, and complete anorexia. The urine was turbid, and contained a quantity of pus cells and vesical epithelium, but no casts or tubercle bacilli. The filtered urine contained no albumin. Nothing abnormal could be felt in the region of the left kidney, even under an anæsthetic, though by bimanual examination the left ureter could be felt

extending from the bladder upwards as a cord of the thickness of a thumb. By cystoscopy thick pus could be seen to escape from the region of the left ureteral orifice. It was thought there might be multiple abscesses in the renal parenchyma, which by successively rupturing into the renal pelvis had produced intermittent pyuria.

OPERATION.—On June 8, 1901, the left kidney was exposed by a lumbar incision. The lower end was first explored and appeared normal; the upper end was then found to be enlarged and fluctuating, as in cystic disease. Nephrectomy was therefore performed. Owing to adhesions considerable difficulty attended the separation of the hilus and enlarged upper end, which extended high up beneath the diaphragm. For the same reason the vessels in the hilus could not be dissected out and separately ligatured. After ligature and division of the dilated ureter the vessels were divided between pressure forceps and the kidney was removed. The pressure forceps were left *in situ*, and the peripheral end of the dilated ureter was sewn to the lower angle of the wound, which was closed by sutures except round the pressure forceps where a gauze plug was inserted. Convalescence was interrupted only by a persistent purulent discharge from the ureter. There was a stricture at its vesical opening, which prevented irrigation being performed from the wound above downwards to the bladder unless considerable force was employed. A fine Nélaton's catheter was, therefore, passed from the lumbar wound through the stricture into the bladder, a second catheter was introduced *per urethram*, and injections of a 0.2 to 0.3 per cent. solution of silver nitrate were then made from the bladder upwards. The secretion ceased, and the patient was discharged well and with normal urine on Aug. 1.

The extirpated kidney was twice the natural size. The upper half was enlarged, nodular, and fluctuating. After division of the kidney it was seen that there were two separate renal pelves and ureters. The lower ureter,



Sagittal section through left kidney ($\frac{1}{2}$ natural size).

pelvis, and renal parenchyma were normal. The upper pelvis and ureter formed a loculated sac, which contained thin pus. The renal parenchyma belonging to the upper urinary tract had disappeared, except for microscopic traces of glomeruli and tubules on the side opposite the hilus. The walls of the pelvis and ureter, which was of the size of the small intestine, were greatly thickened (Fig.).

Thus the ureter of the upper pelvis was first infected. The inflammatory process produced a stricture at the ureteral orifice which at times became completely blocked. But at an early stage the parenchyma of the upper half of the kidney was probably sound, so that it continued to secrete. The pressure rose and produced pain and pyrexia, until the obstruction was overcome and pus and urine escaped into the bladder. This occurred at first every 3 weeks. As, however, the renal tissue was gradually absorbed, the secretion of urine became steadily less so that the last interval between the attacks of pyuria was twelve months. There was no secretion of urine, and the formation of pus did not suffice to break down the barrier, until, after the influenza, there was an acute exacerbation of the pyonephrosis.

The fact that healthy urine was drawn off from both ureters was explained by the entrance of the catheter on the left side into the healthy ureter; the failure after the first attack to detect anything abnormal by palpation by the position of the swelling under the diaphragmatic arch. Probably it would have been sufficient to have resected the diseased part, and left the lower healthy kidney, but the former could not be freed from its adhesions until the lower pole had been dissected out.

Symptoms of Intestinal Obstruction from a Vascular Lesion: Gangrene of the Stomach and the Duodenum.—Herbert W. Page, M.C. (*Lancet*, May 31, p. 1517).—A man, aged 50, was seen on Feb. 10. He had good health until $3\frac{1}{2}$ years previously, when he had a severe attack of typhoid fever, which was complicated by thrombosis in the right leg. His health had never been the same since. In the summer of 1899 he had thrombosis in the left leg after a bicycle accident, and again in the spring of 1901 he was laid up for a month with thrombosis of the left femoral vein. While walking he was suddenly seized with pain above the umbilicus which was soon followed by diarrhoea. The diarrhoea ceased and the pain diminished, but there was much uneasiness or discomfort in the epigastrium and he felt as if he must be sick. He was cold but was not collapsed. In the evening he was restless, and had considerable epigastric pain. He had vomited a little. Flatus had been passed. Abdominal examination was negative. A subcutaneous injection of morphine and atropine was administered. He had a restless night and occasionally vomited a little odourless coffee-coloured fluid. There was some hiccough. Before daylight the epigastric pain returned and at 6 a.m. the injection was repeated. At 10 a.m. he was fairly easy, but he still had epigastric pain and there was slight tenderness. The pulse ranged from 90 to 100. Abdominal examination was again negative; there was

no distension whatever. A rectal examination showed nothing and a soap-and-water enema was without result. At 1 p.m. some resistance and tenderness were detected midway between the umbilicus and the left costal margin and these became more marked in the course of the afternoon. The other symptoms continued and no flatus was passed. The pulse rose to 120.

The writer saw the patient at 7 p.m. He was extremely ill and was vomiting copiously coffee-coloured liquid. The pulse was 108 and was occasionally intermittent. The abdomen was flaccid, moved on respiration, and was tender only between the umbilicus and the left costal margin where there were resistance and slight fullness. Clearly operation, if undertaken at all, could not be delayed. Though every conceivable lesion was considered no opinion could be formed as to the condition present. A kink from former typhoid ulceration was thought of, but from the symptoms and history the seat of probable obstruction was presumably high in the intestinal tube, while kink the result of typhoid fever would probably be low. The abdomen was opened in the middle line above the umbilicus. The stomach was enormously distended and dark purple, with here and there small flakes of lymph upon its surface. Had it been a piece of gut exposed in operation for strangulated hernia, the writer would have hesitated to return it to the peritoneal cavity, for it had all the appearances of incipient gangrene. The intestines were empty. No cause of obstruction could be found, but as the stomach was approached the collapsed bowel of natural colour gradually merged into distended and discoloured bowel until at its union with the pylorus the duodenum was enormously dilated like the stomach, and purple. As there was no mechanical cause for obstruction the wound was closed. The condition of the patient was now extremely grave; there was profuse vomiting. Death occurred 3 hours later.

A partial necropsy revealed no obstruction. The stomach and duodenum were greatly distended. On opening the stomach about 2 pints of the dark fluid altered blood were found. The stomach and duodenum were stained with it, but none had passed into the intestine. The stomach-wall was greatly stretched, the veins were engorged, and on its anterior surface was slight superficial ulceration.

Only vascular lesion could account for the symptoms and the state of the stomach and duodenum. The history is suggestive. The patient had had 3 previous attacks of thrombosis. The suddenness of onset of the present attack was very suggestive of a sudden vascular lesion and nothing else could possibly have produced, in so short a time as 24 hours, the striking changes which were found in the stomach and duodenum. Venous rather than arterial thrombosis probably was the cause of the gangrene. Probably the coronary vein and its tributaries and the pyloric vein also were the vessels affected.

In Allbutt's "System" Prof. Welch says—"The symptoms of thrombosis of the mesenteric veins are the same as with occlusion of the mesenteric arteries, but as a rule are even more violent and rapid in course. They are as follows: sudden onset of very intense, colicky, not definitely localised, abdominal pain; distended, tender, tympanitic abdomen; vomiting which may be bloody; obstipation, or bloody diarrhoea; and rapid collapse, with cold sweat and subnormal temperature. The diagnosis is likely to be acute ileus and laparotomy to be performed. Death generally occurs within two or three days. The symptoms, may, however, be less violent and the course less rapid than those mentioned. At the necropsy are found hæmorrhagic infarction and gangrene of the intestine, hæmorrhages in the mesentery, bloody fluid in the peritoneal cavity, and sometimes, although not regularly, peritonitis."

See also "Portal Thrombosis with Intestinal Gangrene," "REVIEW," Vol. III., p. 596.

Lipoma of the Median Nerve.—Mr. H. J. Waring (*Brit. Med. Jour.*, June 21, p. 1538).—A man, aged 38, was seen in April, 1901. The right forearm and hand were crushed by a heavy bar of wood in June, 1895. No bones were broken, but he was disabled from following his occupation for 15 months. In June, 1896, he suffered from severe pains in the right hand and stiffness in the thumb and forefinger. Enlargement of the arm then began. Attacks of increasingly severe pain, chiefly in the region of the median nerve, occurred.

The forefinger and thumb were considerably enlarged and apparently elongated. The extremity of the forefinger was bent on itself almost at a right angle so as to lie on the palmar aspect of the distal portions of the middle and ring fingers. Movements in the metacarpophalangeal joints were present, but in the interphalangeal joints were absent. A soft non-fluctuating swelling occupied the thenar eminence and radial side of the hand and extended 2 inches above the wrist. A hard swelling was felt in the biceps muscle a little above the elbow. Attacks of severe pain in the hand, forearm and lower part of the right side of the neck kept the patient awake at night. All the electrical reactions were normal, except that of the abductor pollicis, which could not be obtained. The region of the palmar swelling and the palmar aspect of the affected digits were very tender. Owing to difficulty in diagnosis an exploratory incision was made into the bicipital swelling. This was found to consist of hard, fibrous tissue, probably the remains of a former injury. On account of the severe pain and comparative uselessness of the limb amputation was performed through the forearm. The median nerve was found to be thickened and had to be drawn downward in order to make the section through sound tissue. The enlargement of the forefinger, thumb, palm and forearm, was found to be due to a tumour in the course of the median nerve. The tumour was composed almost entirely of fat, and appeared to consist of two parts—a lipoma

around but outside the sheath of the nerve and a growth of fatty tissue between the bundles of nerve fibres. In the thumb and forefinger the branches were enormously thickened by fatty and fibrous tissue. A skiagraph revealed considerable enlargement of the phalanges and obliteration of the interphalangeal joints. Microscopic examination showed much fatty tissue within the nerve sheath, but the nerve fibres did not appear to have undergone any marked change. The injury appeared to have been the starting-point in the development of the lipoma in and around the median nerve and some of its branches. The hypertrophy of the phalanges and consequent production of the curious deformity of the index finger may have been due to altered nervous influences.

Temporo-Sphenoidal Abscess without Ear Lesions.—Dr. D. B. Lees (*Lancet*, May 3, p. 1248).

CASE 1.—A girl, aged 6 years, was admitted to the hospital on Nov. 14. For 2 months she had frontal headache and earache and for the last month vomiting. Her attitude was one of cerebral irritation with marked photophobia. She complained of severe intermittent pain in the right frontal region. There was double optic neuritis, which was more advanced on the right side. Percussion of the head elicited tenderness only over the right side of the forehead. The tympanic membranes were normal and no discharge from the ear was found. The condition remained about the same till the morning of Nov. 25, when death occurred suddenly.

NECROPSY.—An abscess containing about 2 oz. of greenish inodorous pus was found in the right temporo-sphenoidal lobe, with rough walls of some thickness and consistence. On the dura mater, facing its point of nearest approximation to the surface and overlying the external auditory meatus about half an inch from the tympanum, was a hiatus a quarter of

an inch in diameter with discoloured margin, leading to a necrotic depression in the bone. On chiselling away the latter the underlying lining membrane of the meatus was found normal. The dura mater over the middle-ear was normal and the cavity of the latter and the mastoid cells contained only a trace of clear mucus, the walls and ossicles showing no change. A pure culture of the streptococcus pyogenes was obtained from the pus.

CASE 2.—A girl, aged $1\frac{3}{4}$, was admitted on July 16. Three months before she suffered from vomiting and "used to put her hand to her head and cry out." For 3 weeks she had lost the use of her limbs, a condition which followed a fit. There were drowsiness, bulging fontanelle, and left hemiplegia. A double internal squint subsequently appeared but no optic neuritis. Death occurred on Aug. 16.

NECROPSY.—In the right temporo-sphenoidal lobe was an abscess of the size of a hen's egg, with tough walls and containing thick greenish pus. Some basic meningitis was also present. The brain and membranes were adherent to the right great wing of the sphenoid and the right petrous bone showed a small patch of disease of about the size of a three-penny-piece above the tympanum. The middle-ear on this side was healthy and the membrana tympani was clear and thin.

In each of these cases an abscess in the right temporo-sphenoidal lobe apparently resulted from necrosis of a small part of the petrous bone, without affection of the tympanic cavity or mastoid cells. It is, however, to be regretted that the temporal lobe and petrous bone had not been removed together and placed in formalin before it was attempted to trace the path of the suppurative infection. In the first case the necrosed part of the petrous bone lay over the external auditory meatus and in the second over the tympanum. In both cases the underlying mucous membrane was healthy and it seemed probable that the bone was the primary seat of disease. These cases prove that necrosis of the

petrous bone and temporo-sphenoidal abscess may exist with no otorrhoea and with normal tympanic membranes—a fact of great importance in diagnosis.

Acute Gonorrhœal Peritonitis.—Guy L. Hunner, M.D., and Norman MacL. Harris, M.B. (*Johns Hopkins Hosp. Bulletin*, June, p. 121).—A girl, aged 10, was admitted to Dr. Kelly's service at the Johns Hopkins Hospital on Nov. 4, 1901. On Oct. 26 she complained of soreness in the external genitalia. Two days later she was seized with cramp-like abdominal pains. On Oct. 29 she returned from school because of abdominal pain, vomiting, and a constant desire to defecate with no result. She was brought to hospital on Oct. 31. She was pale and ill-looking, and complained of pain over the symphysis, and of painful micturition. There was a purulent vaginal discharge which microscopically showed many pus cells and gonococci. A potassium permanganate douche was ordered, and she was not seen again until Nov. 4. In the meantime the abdomen had become swollen and hard, and she walked about in a bent position. No source of contagion could be ascertained.

She was admitted at 5 p.m. with a temperature of 99.8° and pulse of 104. When seen at 7 p.m. she was lying in the dorsal decubitus, with the legs extended. The cheeks were slightly flushed. She said she had had a bad "stomach ache" and some vomiting in the morning, but that she felt well now. The pulse was 100, and of good volume. The abdomen was somewhat distended and cylindrical, the costal grooves being obliterated. The respirations were costal, but she readily took deep abdominal inspirations without pain. On being asked to indicate the site of the morning "stomach ache" she placed her hand over the hypogastrium. The entire abdomen was resistant, but fairly deep pressure could be made without much pain. On percussion the note was generally dulled, but resonance was everywhere present

except in the right flank, where there was dulness which changed to resonance on turning on the left side. In the left flank the note was high-pitched and remained the same on turning the patient to the right side.

Thus there was a history of gonorrhœa for an unknown period and peritonitis for one week. The physical signs were moderate distention, muscular rigidity, and pain on deep pressure in the hypogastrium. The excellent pulse, and general condition led to the belief that there was gonorrhœal peritonitis in the process of healing. During the night, however, a decided change took place, and at 9 o'clock the following morning the picture was entirely different. The expression was anxious, and the face was drawn and very cyanotic. The patient was very restless and complained of thirst. The temperature was 100.2° and the pulse 144. The pulse was soft, bounding, and compressible. The tongue was thickly furred and the breath foul. The abdominal condition was about the same. At 11 a.m. the temperature was 103.2° and the pulse 136. The leucocytes were 10,000 at 1 p.m. Consent of the parents to an operation could not be obtained until 2 p.m. In the meantime hot turpentine stupes were applied every half hour to relieve the abdominal pain, which had become severe.

During an examination under ether the muscular rigidity persisted. The vaginal mucosa was congested. The hymen had been dilated, and readily admitted the little finger. Rectal examination showed a uterus of about normal size, but the adnexa could not be distinguished. The abdominal incision was made rather high to avoid the bladder. The peritoneum was congested and œdematous. Its incision revealed a slight increase in the peritoneal fluid, which was chocolate-red and turbid with a grayish flaky-looking material. The omentum was congested and adherent to the anterior abdominal wall and to the intestines. The intestines were slightly distended, congested, adherent to each other and to the lateral peritoneal surfaces. The right tube

was adherent to the pelvic wall, its fimbriated end being attached to the rectum. On freeing the end a patch of white fibrin was left on the rectum. No pus could be squeezed from the tube. The left tube was adherent to the infundibulo-pelvic ligament, its fimbriated end being open, and yielding no pus on pressure. The ovaries were swollen and semi-translucent. Beginning at the ileo-cæcal valve the small bowel was taken up loop by loop and its coating of fibrinous material wiped off with wet gauze. On reaching the splenic region considerable purulent material was encountered, and an attempt was made to cleanse the cavity by saline irrigation, 6 litres being used while the upper intestines were being gently wiped. The mesenteric glands were swollen, and in the upper abdomen were deeply hæmorrhagic. The abdomen was left full of salt solution and closed with interrupted silkworm gut sutures. Four ounces of epsom salts were left in the rectum. Death occurred 36 hours after operation. The gonococcus was cultivated from the abdominal exudation.

Treatment of Torticollis by Subcutaneous Rupture of the Sterno-Mastoid.

—A. Lorenz (*Wien. Med. Woch.*, Jan. 11, p. 65, and Jan. 18, p. 121).—To overcome the contraction of the sterno-mastoid in wry neck is not to cure the disease. Treatment of this muscle is, however, a necessary preliminary to that of the cervical scoliosis which is always present. The writer formerly thought that, though resection of the sterno-mastoid as advocated by Von Mikulicz was unnecessary even in the most intractable cases, the muscle and any contracted fascial bands could not be too thoroughly divided, and that for this an open operation was required. The more attention is paid to the cervical scoliosis the less severe becomes the operation on the sterno-mastoid. Thus the writer soon learned that if the malposition of the head and neck was forcibly over-corrected under chloroform imme-

diately after division of the sterno-mastoid subcutaneous tenotomy sufficed, since any muscular fibres or fascial bands which had escaped the knife were broken down by manipulation. In children he now discards even subcutaneous tenotomy. He was about to perform this operation on a girl, aged 9, with moderately severe torticollis, when the assistant, who employed more force than usual in putting the muscle on the stretch, ruptured it. The head and neck were immediately placed in plaster-of-Paris and a perfect result was obtained. Eighteen months later there had been no relapse. An unsuccessful attempt was then made to rupture the muscle in 2 adults with torticollis. The adult sterno-mastoid is about as strong as the tendo Achillis. The oldest patient in whom rupture was successful was 14. In all the young children in whom subcutaneous rupture was employed, there was no difficulty, and in them it should always be attempted before proceeding to tenotomy. A cushion is placed under the shoulders and the muscle is gradually stretched while an assistant depresses the corresponding shoulder. After rupture or tenotomy of the sterno-mastoid the head should be slowly bent over until, if possible, the ear of the sound side touches the shoulder, and, while the child is still under the anæsthetic should be placed in plaster-of-Paris in an over-corrected position. After removal of superfluous parts the plaster support consists essentially of 2 rings—one round the forehead, the other round the thorax—and a wide vertical communicating band, strengthened with strips of wood, on the over-corrected convex side of the cervical curvature. When the plaster is removed 3 or 4 weeks later the child holds its head in the over-corrected attitude and continues to do so for some time. The final result is usually complete cure. The principle of the writer's treatment is identical with that employed in talipes, viz., over-correction and long fixation in the over-corrected attitude.

The success of the treatment incidentally proves that wry-neck is not usually due, as Stomeyer

and others believe, to contraction of an *intra partum* ruptured sterno-mastoid. A healthy sterno-mastoid is not unduly stretched in any position which can be assumed by the head with an intact vertebral column, and consequently cannot rupture. The fact of intra-partum rupture, as evidenced by the presence of a sterno-mastoid "tumour," is, therefore, a proof that torticollis existed before birth; the rupture was due to the torticollis, not the torticollis to the rupture. Further, the fact that sterno-mastoid tumours are scarcely ever followed by torticollis proves that intra-partum rupture cures the torticollis just as does the writer's method in later life. Torticollis may, however, depend in some cases on severe intra-partum lesions; the whole sterno-mastoid may be crushed against the pubes and sustain such damage that it is eventually entirely, or in great part, replaced by fibrous tissue.

Simulation of Appendicitis by Acute Thoracic Disease.—Maurice H. Richardson, M.D., (*Boston Med. and Surg. Jour.*, April 17, p. 399) relates several cases in which acute abdominal pain with or without other symptoms suggested appendicitis so strongly that a surgeon was summoned.

CASE 1.—A boy, aged 6, complained of pain in the right side and headache, vomited, and could not retain anything in his stomach. On the fourth day a medical man saw him and found that there was pain in the right iliac region at McBurney's point. The abdomen was tense and the temperature was 104.5°. On the fifth day the writer saw the patient. The pulse was 120 and the respiration 40. The abdomen was distended and tender everywhere, the legs were drawn up, the respiration was noisy and rattling, the cheeks were flushed, and the eyes were sunken. Acute appendicitis was diagnosed and the boy was sent to hospital. The surgeon on duty accepted the diagnosis without question and removed an appendix which was

thought to be the seat of "catarrhal inflammation." Later a right empyema was discovered. Recovery followed resection of a rib and drainage.

The temperature of 104.5° (which is unusual in appendicitis), the wheezing, and the respiration of 40 should have aroused suspicion of thoracic disease. But the abdominal symptoms misled the writer. In 4 other cases—3 in young children and 1 in a man, aged 35—the experience of the first case put him on his guard and enabled him to avoid error.

CASE 2.—A boy, aged 4, was taken ill with cough and restlessness. On the third day the temperature was 103° and the respiration was rapid but there were no signs of pulmonary disease. Next day the temperature was normal and he felt well, but in the evening the temperature rose to 101.5° . On the eighth day he complained of abdominal pain when he coughed. Repeated examinations failed to explain the rapid respiration. The slightest touch over McBurney's point caused the boy to complain vehemently. As the practitioner in attendance suspected appendicitis the writer was sent for on the following day. The pain seemed severe and the boy complained of it when he moved. There had been vomiting. The abdomen was distended and tender all over but especially in the right iliac fossa. There were abundant pulmonary râles. On the following day signs of pneumonia began to appear. The abdominal symptoms disappeared in 2 days and recovery followed.

The diagnosis between acute thoracic and acute abdominal disease is always easy as soon as the characteristic signs of either are apparent. The chief difficulty in making a distinction is to recognize that the necessity for that distinction exists, for the thoracic symptoms are always masked by the more conspicuous and distressing abdominal ones. Once the attention is drawn to the possibility of a thoracic cause, not only for the thoracic but for the abdominal

symptoms, an accurate diagnosis is perfectly easy.

See also "REVIEW," p. 519.

Extirpation of Tumour of Spinal Cord.—

Henschen and Lennander (Upsala Läkareförenings Förhandlingar, p. 473, 1901).

A soldier, aged 50, in Jan. 1899, after working in the forest in a temperature of 10.12° below the freezing point, felt severely chilled in right leg. In Feb. he had pain in the right shoulder and arm, and in June complained of a "band" over the lower half of the abdomen, and constant aching in the right leg and in both hands. In Aug. there was paræsthesia in the left leg and micturition was difficult. He could not hold his gun and his right foot "dragged." In Sept. he could not feel the floor with his left foot, and both feet were insensible to cold.

On admission to the hospital on Dec. 15, the right foot "slipped" when walking and the right hand was numbed and useless. The left pupil was enlarged. Sensibility to touch, pain, and temperature was absent in both legs, and over the ulnar area of both arms. On Jan. 15 he could hardly sit up, and on Jan. 28 could not turn in bed. The right leg was completely paralysed, and the left paretic. There was complete anæsthesia up to the ribs. A spinal growth was diagnosed.

An operation was performed on Jan. 8, and a polypoid tumour was found between the pia and the arachnoid. It was about $1\frac{1}{2}$ in. in length, flattened, and firm, and extended from the fifth cervical to the first dorsal vertebra. It was a fibro-sarcoma. The evening after removal there was slight return of muscular power in the right hand. On March 23rd the patient could walk, but the right leg was ataxic. During the summer baths, massage and electricity were used and he could get about with the aid of a stick. On Oct. 23rd he could walk without a stick and hop on either foot. The arms and hands were quite normal.

OBSTETRICS AND GYNÆCOLOGY.

Deciduoma Malignum. — Mr. H. J. Blakesley and Dr. R. Sevestre (*Lancet*, July 5, p. 22).—A married woman, aged 31, was admitted to hospital in Oct., 1901. Eight months before admission she had a normal labour. One month afterwards menstruation occurred naturally. She began to lose blood per vaginam 10 weeks after labour, and continued to do so up to the date of admission, except for short periods when blood-stained fluid was observed. She had been rapidly failing in health and losing flesh, especially during the last 3 months, and had complained of severe cough for about 3 weeks, with, of late, dyspnœa on exertion. Four or 5 days previously she noticed 2 swellings on the left side of the vulva. She had had 7 children, 3 of whom were still-born; she had had no miscarriages. She was emaciated and anæmic. There were flushed cheeks, frequent short dry cough, and raised temperature. Coarse moist sounds were heard over the lungs which were most marked at the bases. Vaginal examination showed an oval, smooth, non-fluctuating deep purple swelling about the size of a walnut on the inner aspect of the posterior half of the left labium majus. Immediately internal to this, but separate from it, was a similar smaller swelling superficially ulcerated on its surface. The uterus was enlarged and retroverted but movable. The case was believed to be one of retained products of conception.

Under anæsthesia the cervix was drawn down by a vulsellum, and after Nos. 12, 13, and 14 Hegar's dilators had been passed the finger was introduced. A lobulated, firm, sessile mass was felt occupying the cavity of the uterus, being attached to the left upper half of the organ. With the finger and curette the greater part of the mass was removed piecemeal. The fragments had the appearance of hardened placental tissue. On incising the mucous membrane over the swellings in the vulva their contents readily

shelled out and consisted of blood-clot with firmer strands running through them. After the operation there was no further hæmorrhage, only a slight blood-stained watery discharge. The general condition appeared to improve for a few days, but soon the lung symptoms became more severe; the temperature ranged between 101° and 102°. On the seventeenth day after admission death occurred.

NECROPSY.—The uterus was larger than normal. On its anterior surface between the middle line and the upper part of the left broad ligament were two tuberosities. Each had a smooth and rounded outline; the lower and larger was inclined to be conical, with a base of about one inch in diameter. In colour they were dark red. To the touch they were softer than the surrounding parts but did not give the sense of fluctuation; the peritoneum covering them was smooth and bright. The uterine cavity presented the appearance that would be expected after curettage except in the part beneath the tuberosities, where the surface was irregular and dark red, this clearly being a portion of the growth that the curette had not reached. On the left labium majus were two raw surfaces from which growths had been removed at the operation. Both lungs were studded on their surfaces with dark-red secondary growths, the largest being of about the size of a walnut. Section showed a reticulated appearance with what appeared to be blood-clot in the spaces.

A microscopic section of the uterus showed that the margin of the growth was made of masses of cells—not arranged in alveoli—forcing their way into the surrounding tissue. Internally to the growing margin were the remains of the cells of the normal tissue with cells of the new growth and much extravasated blood; this gradually merged into a part in which no definite structure could be made out but which appeared to consist

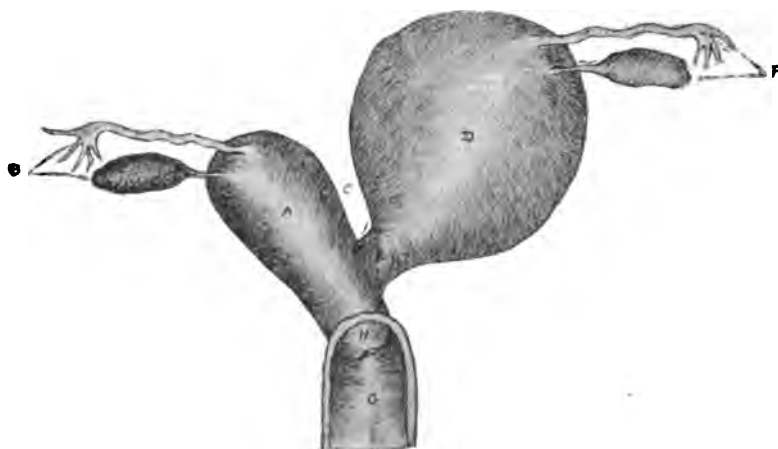
of blood-clot and broken-down tissue. Further examination of the growing margin showed varieties of cells. Most of the cells had no stroma between them and were large and round or ovoid, with deeply-staining nuclei; in some the nucleus had contracted to one side, leaving a vacuole. Besides these single cells there were here and there masses of protoplasm containing a number of nuclei, the so-called syncytium. On closer examination these multinucleated masses suggested that they were made up of numbers of large ovoid cells fused together. Immediately behind the growing margin a section showed patches of extravasated blood mixed with the tumour cells, and it was by no means easy to say what relation the blood-vessels had to the cells of the tumour.

This case illustrates the chief symptoms of the disease, its sequence to pregnancy in a multipara, the early appearance and continuance of hæmorrhage, the rapid wasting with hectic temperature, and signs pointing to extensive disease of the lungs. Most of these symptoms are common to cases of retained products of conception and, as a rule, the diagnosis is made from microscopic section of a portion of the growth after removal. The case illustrates the extreme malignancy of this disease, death occurring in 7 months.

Pregnancy in a Double Uterus.—M. Jay, M.R.C.S. (*Australasian Med. Gaz.*, May 20, p. 233).—A woman, aged 25, who had been married 3 years and had 1 child 2 years old, was seen in Sept., 1901. She complained of backache, lassitude, and a vaginal discharge, which commenced after a miscarriage a few months previously. There was some erosion of the os, and the uterus was enlarged, retroverted and pushed to the right. An ill-defined swelling was felt in the left broad ligament. She was examined under an anæsthetic, and the uterus curetted. The swelling on the left appeared to spring from the left uterine wall. The left ovary and tube

could not be felt. In Nov. she became pregnant. In Dec. she began to suffer from uterine hæmorrhage, and after 3 weeks the discharge became slightly offensive, and dirty brown. On Jan. 30 she was curetted. The uterus was enlarged, and pushed still more to the right. It contained nothing but a little broken-down blood clot. The tumour on the left had considerably enlarged. The discharge ceased, and she appeared well, except for persistent sickness.

On Feb. 17 laparotomy was performed. A swelling resembling a pregnant uterus presented to the left of the middle line, but on searching to the right the uterus was brought into view, with, however, only 1 tube and ovary. The left tube and ovary sprang from the left side of the tumour. There was a distance of 2 in. from the fundus of the uterus to the point where the tumour was attached to the uterine wall. The left ovarian artery was tied, and the layers of the broad ligament were opened, the tumour was enucleated, and the uterine artery entering it below was exposed. This was tied, and the tumour was found to spring from the junction of the cervix with the body of the uterus by a pedicle an inch in diameter. This was trans-fixed and tied, and the tumour removed, making a sleeve which was afterwards brought over the surface of the stump. On cutting through the pedicle, which in every respect resembled an ordinary cervix, a small opening was exposed in the tumour, from which a thick plug of mucus exuded, and similar mucus was filling an opening in the stump, which evidently led into the uterine cavity, but was now, of course, tied off. The mucus was scraped away, and the stump covered. The cut edges of the broad ligament were sutured with catgut, so that the pedicle of the tumour was entirely extra-peritoneal. The uterus, which presented a curious, lopsided appearance, with its one tube and ovary only, was fixed to the parietal peritoneum in the ordinary way, and the wound closed. On opening the tumour a 3-months foetus was found. Recovery was uninterrupted.



DIAGRAMMATIC SKETCH.—A. Uterus. B. Right ovary and tube. C. Sulcus between the two uteri, 2 inches in depth. D. Secondary or accessory uterus containing 3 months' foetus. E. Cervix of same, which formed the pedicle, 1 inch in diameter. F. Left ovary and tube, both normal. G. Vagina. H. Normal cervix.

This case differs from the ordinary forms of uterus bicornis in which the Mullerian ducts are separated from one another in that portion of their course, which would correspond with the body of the uterus, so that the organ at its upper end divided into 2 parts. Here were 2 entirely distinct and separated bodies, each corresponding in every respect to a normal uterus. Below the Mullerian ducts were fused in the ordinary way, forming a single cervix. This condition corresponds more closely with the uterus bicornis unicollis or semi-duplex than with any other.

Pregnancy in a Uterus Didelphys.

—Dr. Robert Jardine (*Glasgow Med. Jour.*, June, p. 447).—A primipara, aged 27, was seen on Nov. 2, 1900, for severe and persistent vomiting. Menstruation which had been regular had ceased on Oct. 2. She also complained of some pain in the pelvis. Vaginal examination revealed a somewhat elongated swelling lying obliquely backwards and towards the right. At first the writer thought this an extra-uterine gestation, but he could not make out any other body to represent the uterus. He concluded that the patient was pregnant, but that the uterus was abnormal in

position and shape. Bismuth and oxalate of cerium relieved the sickness for a few days, but it returned again 12 days later. She was then kept on peptonised milk, which relieved her. On Nov. 28 she was examined under chloroform. An ordinary sized vagina with a single cervix was found, but bimanual examination revealed a double uterus with one side enlarged and evidently pregnant. The enlarged half lay somewhat obliquely towards the right and back of the pelvis, while the smaller half was towards the left and front. The junction of the two parts at the cervix could be distinctly made out. It was somewhat puzzling that there was only one os. A double uterus with pregnant right horn was diagnosed.

The course of the pregnancy was uneventful, except for occasional attacks of sickness. Labour commenced on July 20. The fundus lay towards the left side, and the head was directed somewhat obliquely against the right side of the pelvis. The fundus was not so broad as usual. The os admitted the tip of the finger. It was high up, and the cervical canal passed backwards and towards the right. The presenting part could not be reached, but a rounded mass, evidently the head, could be felt, with a smooth membrane over it. On making a second vaginal examination the finger passed into an opening which gripped it tightly. It was a small opening in the hymen, and a second vagina had been entered. The opening was enlarged and the cervix reached. The os was not dilated. Examination under chloroform revealed that the half of the uterus connected with the patent vagina was not pregnant, but was lined with a thick decidua, which was easily removed. When the finger was in the cavity the body could be made out lying along the right of the pregnant half for

a couple of inches or so above the brim of the pelvis. The hymen of the second vagina was then fully ruptured, and the os admitted the tip of the finger. The head was easily felt. The partition between the vaginæ was thick at the ostium, but thinner at the upper part. The minutest communication between the two canals could not be found.

The diagnosis had been correct so far, but the writer had thought the right half was the pregnant one. As this communicated with the vagina through which intercourse had occurred, the error was not surprising. Even if the other vagina had been discovered no other conclusion could be drawn. The second vagina was missed because it was closed by the hymen, except for a very small opening. The patent half was quite open, and the remains of the hymen were very apparent. The abnormal position of the pregnant half was probably due to its falling towards the back of the pelvis from its own weight. Rotation of the entire uterus apparently had occurred. After delivery there was a tendency to recurrence of this.

After labour had gone on for 24 hours little dilatation had occurred. The contractions were fairly strong, but the obliquity of the uterus prevented the presenting part from bearing on the os. The largest Barnes' bag was inserted, and in 2 hours the os was well dilated. On removing the bag it was found that it had been forced through the upper part of the vaginal septum. The obliquity of the uterus had caused this. The patient was delivered with forceps of a living male child weighing $7\frac{1}{4}$ lb. The lower part of the septum was lacerated, and the perineum partially torn. Both sides of the uterus were thoroughly washed out. The thick decidua had already been cleared out of the non-pregnant half. The septum was removed and the raw surfaces on the anterior and posterior walls were stitched with continuous catgut sutures and the perineum was repaired. The puerperium was normal, the temperature never rising.

How did pregnancy occur in the uterine half connected with the non-patent vagina? Penetration could not have taken place. The opening barely admitted the tip of the finger; and the hymen was not a resilient, for it tore easily. Probably spermatozoa entered the small opening in the hymen. Possibly both sides were pregnant, for in the decidua removed from the right half of the uterus a small mass was embedded which might have been a carneous mole. It is interesting that menstruation did not occur from the unimpregnated half.

Nov. 10, 1901.—The perineum is complete, and there is no external evidence of a double vagina. The vaginal mucous membrane is smooth, but the site of the septum can be traced, especially at the upper part where its remains can be felt and seen. Bimanual examination reveals apparently only one external os which admits the tip of the finger. To the left, the body of the horn which had been pregnant can be traced. It lies far back in the pelvis, with its fundus well towards the left side. The right horn, which is much smaller, lies towards the right of the pelvis also backwards and outwards. It cannot be so easily traced, but the junction at the cervix is easily made out. The speculum shows an ordinary multiparous cervix. A sound passed into the left side goes outwards and backwards for $2\frac{3}{4}$ in. There is some difficulty in passing a smaller one into the right horn. It passes only for about 2 in. The handles of the sounds cross. The septum between the two cervical canals has been slightly destroyed, giving the appearance of a single os externum. Thus there were a true bicornate uterus (uterus didelphys) and double vagina.

Labour in a double uterus may be interfered with in several ways. If both sides are pregnant there may be the same difficulties as in twin cases, viz.: locking from both presenting parts being simultaneously driven into the brim. With one side pregnant, the non-pregnant half, which is sure to be enlarged, may obstruct. In the present case this did not occur, as the body of

the non-pregnant half was above the brim. The contractions of the uterus are liable to be feebler than in an ordinary case, as the walls are ill-developed. It is well that this is so, as otherwise rupture is apt to occur. Even as it is it may occur. Malpresentations are common, and, as the uterine axis does not lie on the axis of the brim, the presenting part does not bear properly upon the cervical canal, and dilatation is slow, as in the present case. Interference is often necessary. If delivery by the natural passages is impossible Cæsarean section should be performed, Porro's operation or extirpation may be necessary, but the uterus should be left if possible after sterilization by tying and cutting the tubes. After delivery through the natural passages, severe post-partum hæmorrhage may occur, if the placenta has been attached to the septum, or the septum has been torn. Plugging would then be the best treatment. The decidua which lines the non-pregnant horn should always be removed. It may be expelled but the practitioner must not trust to this. If it is retained, sepsis is likely to occur. If the vaginal septum is torn during delivery, it should be completely removed. If it is not damaged, it may as well be left.

See also "REVIEW," Vol. II., pp. 13 and 702.

Tuberculosis of the Cervix Uteri.—Alterthum (*Centralbl. f. Gyn.*, Feb. 22, p. 197).—Cervical tuberculosis is frequently macroscopically indistinguishable from malignant disease. (See also "REVIEW," p. 320). A woman, aged 36, whose father died of tuberculous laryngitis, had suffered from abdominal pain, constipation, and painful defecation since an abortion in 1896, which was followed by "inflammation." In May, 1901, there was a second abortion, which was followed by an aggravation of the troubles. For 8 weeks before admission to hospital (date not stated) there had been pyrexia and a purulent vaginal discharge. The lungs and heart were normal. The abdomen was distended and tender. On the posterior lip of the gaping os about the junction of the pavement and cylindrical epithelium was a

readily-bleeding polypoid excrescence. The whole of the cervical mucosa was swollen and covered with smaller scattered growths. The pelvis was completely filled with nodular masses, which displaced the posterior and lateral vaginal fornices downwards, and enveloped the uterus so as to completely obscure its outline. The rectum was displaced to the left, and was constricted near the sphincter by a firm fibrous band, 1 in. wide. An early carcinoma with old perimetritis and parametritis was suspected. The polypus with the subjacent tissue was excised. In places the single layer of cylindrical epithelium, which covered the numerous prominent papillæ of the cervical mucosa, was characteristically changed. Over considerable areas it consisted of several layers or formed clubbed or tufted projections. Some of the lumina of the glands were filled with proliferating cells, or with granular detritus, the product of their degeneration. The superficial character of the proliferation, and the fact that the membrana propria of the glands was everywhere intact showed that it was not a malignant growth. There was also but little reactive round-celled infiltration.

Tuberculosis of the cervical mucosa as of the mucous membrane of the uterine body may occur in two forms. In one the mucous membrane is converted into granulation tissue containing numerous epithelioid and giant cells, and caseating foci. The surface epithelium is intact, but glands are very scarce. In the other the process begins superficially as proliferation and degeneration of the superficial and glandular epithelium. The final stage in both forms consists in complete destruction of the mucous membrane. In endometritis the uterine cavity may be filled with caseous masses. The writer's case belonged to the second group, as no tubercles or giant cells were present. A few tubercle bacilli were found in the detritus. It is doubtful whether the whole process was tuberculous. Rectal constriction has not been observed as a result of pure genital tuberculosis. Possibly this at least was the result of a former septic inflammation.

NOTES.

RUDOLF VIRCHOW. — By the death of Virchow the world has lost one of its greatest minds. The son of a small farmer and shopkeeper of Schievelbein, a town in Pomerania, he was at 25 appointed professor at the Berlin Charité. In 1849 his enthusiasm for reform discredited him with a reactionary government, and he was dismissed. But his reputation was already sufficient to secure his immediate appointment as Professor of Pathological Anatomy in the University of Würzburg—the first chair of pathology instituted in Germany. There he remained until 1856, when he was recalled to Berlin on his own terms, viz., the erection according to his plans of a new pathological institute. This, the first of its kind in the world, was remarkably complete, and contained laboratories for experimental and chemical pathology. Virchow also founded the pathological museum of Berlin, and himself collected, prepared, and labelled most of its 23,000 specimens.

Virchow's researches form the basis of modern medicine and pathology. Before the appearance of his "Cellular Pathology," in 1858, medicine was dominated by the old humeral pathology, the blastema theories of Schleiden and Schwann, and the doctrine of dyscrasias. The blastema was supposed to exude from the capillaries, permeate the tissues, and by a process of free formation

or spontaneous generation give origin to the organised or cellular elements. True, attempts had been made before Virchow's time to substitute exact observation for such speculations. Morgagni, to whom Virchow acknowledges his indebtedness, in 1761 insisted that a close study of the alterations undergone by organs would alone furnish a clue to disease. In 1842 Schwann demonstrated that all living things, except the lowest, were an aggregate of cells, each of which presented all the essentials of life, thus disproving the vitalistic view of the indivisible unity of the organism. But he still clung to the theory that the cells were derived by spontaneous generation from the blastema. Remak made a great advance, when, as a result of embryological observations, he asserted that cells were derived from cells alone, and that cellular formation from an amorphous substance was impossible. As Prof. Monti, of Pavia, has pointed out, the cellular theory of life, which enabled Remak and Kölliker to raise histology to the position of a science, led inevitably to the cellular theory of disease. Virchow, with the insight of genius, perceived this, transferred Remak's conclusions from embryology to pathology, and formulated the law, *omnis cellula a cellula*—a modification of Harvey's famous dictum. This reference of all organised life, whether physiological or pathological, to the cellular unit, constitutes his greatest claim to im-

mortality. But the demonstration of the development and cellular origin of connective tissue, the credit of which he shares with Reichert, was of almost equal importance.

Though Virchow's views as to the dependence of disease on morbid cell changes, functional or anatomical, were generally accepted, many authorities vehemently opposed them. Rokitansky, the first pathologist of his time, was converted to cellular pathology, only after a long and bitter controversy, by the discovery of diapedesis in inflammation. He was the leading exponent of the theory of dyscrasias, and regarded local anatomical changes as secondary to primary vicious alterations of the blood and exudations. Broca and Robin advocated the claims of the blastema and of spontaneous generation of cells as late as 1873. Virchow recognised that dyscrasias depended on the introduction of noxious substances of cellular origin into the circulation, and that to understand their etiology search must be made for the altered cellular groups on which the blood changes depend. Working on these lines he discovered the pathology of leukæmia, described leucocytosis, and proved that Hughes Bennett's view as to leukæmia being due to suppuration of the blood was untenable. These researches practically inaugurated modern hæmatology.

In his second great work, *Die krankhaften Geschwülste*, which appeared between 1863 and 1867, but was unfortunately never finished, cellular pathology was elaborated with special reference to tumours. He showed that a tumour never arises by spontaneous generation out of structureless blastema or exudations. Whether new growths resemble

the tissue in which they arise (homology) or differ from it in structure (heterology) there are no specific tumour cells. The type of structure is always to be found within the body, and it is from cells of this type that the tumour develops. Thus he originated the modern classification of tumours. His researches on the cellular structure of connective tissue enabled him to explain some of the most obscure points in the origin of sarcoma and allied neoplasms.

In 1847 Virchow founded his famous *Archiv*, which he edited uninterruptedly until his death. His contributions to medical journals are too numerous to mention. The majority contained the announcement of some new discovery, such as the description of amyloid degeneration, the morbid formation of pigment, the sheath of the cerebral vessels, the life-history of the trichina spiralis, the adult form of which was formerly supposed to be trichocephalus dispar, and the true nature of multilocular hydatid cysts, which were previously mistaken for alveolar colloid cancer. He also worked out the pathology of phlebitis and thrombosis, and showed their relation to embolism. But he was not only an original worker and thinker; he was an unrivalled teacher. He originated the whole modern system of pathological teaching and research, including the method of making necropsies.

In other branches of learning Virchow was an authority. In hygiene he opposed the exaggerated importance attributed to Pettenkofer's ground-water theories. He was a most influential member of the town council of Berlin, and chiefly owing to his initiative the city obtained a model system of sewerage and became one of

the healthiest in the world. In anthropology, ethnology, and archæology he was eminent. As a politician he was the leader of the German liberal party and the hated opponent of Bismarck.

As medicine is a progressive science, many of Virchow's doctrines will doubtless be modified in the future as some have been during his life. Thus he maintained that the primary change in inflammation was proliferation of the fixed tissue cells, which acquired the property of attracting the circulating fluids, and so produced hyperæmia and exudation secondarily. The similarity of the process in different tissues he explained by the universal presence of connective tissue. Later, Cohnheim's work on the migration of leucocytes in inflammation—in reality a revival of the discoveries made by Addison, in 1843, and Waller, in 1846—led many to abandon Virchow's views and to attribute small-celled infiltration entirely to diapedesis. It is now recognised that the truth lies between the two doctrines. The large polynuclear cells, which first appear in inflamed tissue and are always in the majority, are derived from the blood by migration, the cells of new formation or granulation cells, which are constantly present, are derived from the fixed cells of the connective tissue. The latter are concerned with repair, the former are eliminated as pus or are reabsorbed by the lymphatics. Virchow's views as to the origin of the parenchymatous cells of carcinoma from the cells of connective tissue by a process of transformation, to which he applied the name heteroplasia (now employed in a different sense) have long been disproved so completely that Bard, in 1886, qualified the famous *omnis cellula a cellula* by the addition of *ejusdem generis*. Recently the discovery of numerous active

substances in the blood serum of man and animals, such as agglutins, præcipitins, and antitoxins, has appeared to some, especially French writers, to be only a return to humeral pathology. But these bodies probably are cell-derivatives, a view elaborated by Ehrlich in his *Seitenketten* theory. Whatever part of Virchow's work becomes obsolete, his conception of the cell as the unit of life, healthy or diseased, will probably remain.

THE ERADICATION OF YELLOW FEVER FROM HAVANA.—The eradication of yellow fever from Havana, where it has been always endemic during historic time, is a crowning proof of the mosquito theory of its origin and one of the greatest triumphs of sanitary science. In the *Lancet* of Sept. 6, Major W. C. Gorgas, of the Medical Corps of the United States Army, who was Chief Sanitary Officer of Havana during the occupation of the town by the American troops, tells how the result was obtained. The reporting of yellow fever was compulsory. Cases were promptly isolated and quarantined by guards employed by the Sanitary Department. No communication whatever was allowed with the quarantined area except that of the visiting physicians and the sanitary inspector. If the case was fatal the body was buried with the usual sanitary precautions adopted in highly dangerous diseases. In all cases the quarantined area was disinfected. The general sanitary measures adopted appeared to be rapidly decreasing the general death-rate. This in 1898 was 91·03 per 1000, in 1899 it fell to 33·67, and in 1900 to 24·40. But the work apparently had no effect upon yellow fever. The winter epidemic of 1899, continued in 1900. There were during 1900 1,244 cases of yellow fever, with 310 deaths.

The investigations of the Army Board proving the theory of Dr. C. Finlay that yellow fever is conveyed by the *stegomyia* mosquito were published in Feb., 1901 ("REVIEW," Vol. IV., p. 193). An ordinance was issued requiring all people within the city limits to keep receptacles containing water mosquito-proof. The city was divided into districts. An inspector was appointed for each district, under whose directions oil was poured into all puddles, cess-pools, etc., and after sufficient notice had been given all receptacles in which larvæ were found were destroyed. All persons having larvæ on their premises were fined. To prevent the *stegomyia* from biting infected persons the hospitals and houses in which there were cases of yellow fever were thoroughly screened. To kill the infected mosquitoes the infected building was dusted from top to bottom with pyrethrum powder. While pyrethrum powder is not as good a mosquitocide as some other substances it is the least objectionable to the people whose dwellings are being fumigated. It does not injure fabrics, and within 4 or 5 hours the room can be again occupied. It, however, does not kill all the mosquitoes. Many are simply intoxicated and will revive if exposed to fresh air. Hence the mosquitoes were carefully swept up and destroyed. The houses contiguous to the infected house were treated in the same way lest infected mosquitoes had escaped to them. Every room was carefully sealed. A pound of pyrethrum powder was used for each 1000 cubic feet of air space.

In Jan., 1901, there were 24 cases of yellow fever with 7 deaths—a large number for that month; in Feb. there were 8 cases and 5 deaths. The destruction of mosquitoes was begun on Feb. 27. In March there were only 2 cases.

No other case occurred until April 20. This condition had never been approximated before in Havana. On April 21 and 22 there were 2 more cases, but the disease did not spread. On May 6 and 7 there were 4 more cases, but the focus was promptly controlled. Not until July 21 was there another case. After July 1 disinfecting measures were abandoned and only destruction of mosquitoes was continued. The guard was still kept at the infected house, but a reasonable number of immune persons were allowed to come and go. In July there were 4 cases, and in Aug. 6. As it was thought that Havana was being reinfected from the outside all non-immune persons who arrived in the city were kept under observation for a week. The last case of yellow fever occurred on Sept. 28. In Oct., Nov., Dec., and Jan., 1902, there were no cases.

THE QUACKS OF A CENTURY AGO—Medicine and Surgery, which are now honoured in the persons of their chief practitioners to a degree heretofore unknown, seem in 1802 to have been menaced by an army of nostrum-mongers. And this despite the labours of the Hunters, the Cullens, and other great men. A "Detector of Quackery," published in 1801-2, gives a vivid picture of the pseudo-practitioners fashionable in London one hundred years ago. "This may be called the age of Quackery," says the author, and, in a chapter on "Medical Empiricism," he describes in detail the methods and characters of certain "notorious modern empirics." "The first of these distinguished personages is Dr. Brodum, whose medicines have so long been the theme of paragraphists." A German Jew by birth, he attended another quack, Dr. Bossy, in quality of valet "when that beneficent sage came over to enlighten

the eyes of the English, and with him made the tour of England." He learnt some medical terms from his master, whose lectures he attended. "We are not certain whether the love of gain, or a desire to alleviate the sufferings of his fellow-creatures, first induced Dr. Brodum to give up the science of shaving, dressing a wig, and brushing a coat, for the more elegant art of preparing the Nervous Cordial and Botanical Syrup; two medicines which, from the Doctor's knowledge of the Linnæan system of botany, we may consider as grand restoratives of nature." These drugs were traceable, it appears, either to Count Cagliostro's "*Baume de Vie*," or to the famous Count de St. Germaine's "tea for prolonging life."

"The talisman which metamorphosed a lacquey into a physician was the diploma which the benevolent and disinterested professors in the Marischal College of Aberdeen sent to this enterprising foreigner." These 'stamp-degrees' were at that time a scandal to Aberdeen and to the profession. They were conferred by post, in the most informal and expeditious manner, in return for some ten or twelve pounds, and were often procured by country practitioners otherwise respectable. King's College in 1801, protested through one of its professors, that it had no connection with the too-accommodating Marischal College, which, wrote Professor Bentley, "is about a mile off in New Aberdeen." "Neither Solomon nor Brodum," he adds, "ever did or could obtain any academical honour" from King's College. Brodum toured through England, "generously dispensing medicines for a small compensation." Settling in Lon-

don, he found a powerful auxiliary in the "late Quack Doctor Freeman's Widow," whom he married. Brodum's famous pamphlet, impudently dedicated to the king, was a "Guide to Old Age." In its pages the efficacy of the Doctor's medicines is supported "by a cloud of witnesses." In most respects the work resembles the quack productions of our generation. A fellow religionist of his, and a "co-graduate" of Aberdeen, was the notorious Dr. Solomon, of Liverpool, whose "Guide to Health," though of no sort of utility medically, was so popular as to be pirated. Dr. Solomon accordingly signed all future copies of his book, thus proving to his critics that he could write. On p. 36 we read—"That the most learned physicians have not been able to discover in the Cordial Balm of Gilead the least particle of mercury, antimony, iron, or any other mineral except gold, pure virgin gold, and the true balm of Mecca." This balm was composed of an intermixture of rosemary, sage, turpentine, lemons, and mace. No less famous than the foregoing were "Doctors" Lattese, Gardner, Perkins, Senate, Buzaglo, and, at an earlier date, Graham. Brodum, Solomon, Perkins, and Senate were the "four principal empirics who infested England" in 1802, and they in their turn were supported by miracle-mongers of inferior note, "such as the vendor of Leake's Patent Pills; Dr. Barton's Vital Wine; and that still more volatile cordial, Oxygen Gas, as well as Dr. Squirrels' Tonic Drops and Powders, Godbold's Vegetable Balsam, and De Velno's Vegetable Syrup." Lattese "in his researches discovered a secret by which parents, who were desirous of an heir male 'should positively have a boy,' " thus anticipating the late Dr. Schenk

LEADING ARTICLES.

BRITISH GYNÆCOLOGICAL JOURNAL, MAY, p 85.

Precocious Sexual Development.

By W. ROGER WILLIAMS, F.R.C.S.

Signs of sexual precocity may appear at any time from birth to the normal period of puberty. Females are more often affected than males, in the proportion of 4 to 1. Extreme forms of precocious sexual development are rare. The literature for the nineteenth century accessible to the writer yielded only 105 cases. Precocity generally is manifested in the *ensemble* of the phenomena of sexual maturity, but often, especially in females, only in one or more of the constituent phenomena. Thus instances of precocious menstruation without premature development of the genitals or secondary sexual characters are relatively numerous. In some cases the only evidence of female precocity may be mammary overgrowth; in others, ovulation; and in others, undue development of the external genitals, sexual hair, etc. In precocious females the internal sexual organs and pelvis as well as the external genitals are often prematurely evolved. Necropsies at birth, and even in the seven-month foetus, have shown maturing Graafian follicles, corpora lutea, and recent ovarian cicatrices. Similarly, in precociously evolved boys the testes are often large, and emissions have been known. In the foetus born before term, premature descent of the testes into the scrotum as early as the fifth and sixth months of intrauterine life has several times been observed.

Sexual precocity is not incompatible with health, but most of the subjects have bad health and are short-lived. The proverb, "early ripe, early rotten," is abundantly confirmed. A large proportion, especially the females, suffer from rickets which may account for their generally backward dentition and skeletal development. It accords with this that in some cases with no rachitic indications the dentition and skeletal development have also been precocious. Hydrocephalus is sometimes observed. The mental qualities never correspond to the sexual or bodily development; either the child has the psychical qualities of its age, or it is dull, mentally defective, or even idiotic. Sexual passion at all proportionate to the physical precocity is seldom manifested, but often there is self-abuse. Precocity has occasionally supervened after some serious illness; and the development of a voracious appetite has frequently been precursory. Obesity is by no means uncommon. Undue pigmentation of the general integument, diffuse or discrete, and hypertrichosis have been noticed in several cases.

The writer has found recorded 13 instances of sexual precocity in female children coincident with intra-abdominal tumours, 11 of which were ovarian (8 sarcomata, 2 cystomata, and 1 fibroma), and 2 of adrenal origin (both sarcomata). Of 23 sarcomatous ovarian tumours in young children Gautier found that 4 were associated with signs of sexual precocity. In most cases of this kind the sexual precocity seems to be caused by the tumour; but in some the premature disposition to

tumour formation appears to be a consequence of early ageing, for the ordinary stages of growth and development are quickly run through by the precocious. Thus grey-ness of hair, baldness, atheroma of arteries, and senile decay have been observed. Precocious children generally come of large families, but seldom is more than one child in a family affected. In a few instances one of the parents had been similarly precocious. Great precocity in the growth of the body usually brings with it premature pubescence. If under these circumstances the sexual organs continue to develop rapidly the general development is retarded and stunted. Hence such persons, notwithstanding early precocity, generally end by being much below the average size. On the other hand, precocity with arrest or retardation of sexual development, as St. Hilaire has pointed out, tends to the production of gigantism, for growth is then freed from the incubus of the opposing forces of reproduction and development. Thus the sexual impotence of giants and their backward development may be explained. It is curious that in female infants sexual precocity is comparatively seldom correlated with such great increase in the general development of the body, especially of the muscular and skeletal systems as is common in males. This difference may be due to the sexual development being relatively more completely evolved in the female than in the male. It accords with this that precocious maternity is much commoner than precocious paternity. The earliest known age of conception is 8, of virility 13. Female precocity of the less extreme kind, such as that which supervenes between the tenth year and the normal period of puberty generally indicates nutritive vigour and vitality in excess of the ordinary;

the subjects generally marry early and have more children than the average.

Domesticated animals may show precocity. Thus, Berthold has described an instance in which a kid, only 14 days old, was impregnated by an adult goat, and bore a living kid at the natural term of gestation. As a rule, the lower species of animals develop more rapidly, and are more precocious than the higher ones, and few animals are so slow in attaining maturity as man. The lower races of mankind are more precocious than the higher; thus the children of savages, negroes, etc., up to a certain age are more active and intelligent than their European congeners, and their reproductive faculties are earlier evolved. With the advance of civilisation development is retarded. Women, and the females of all domesticated animals are more precocious and earlier evolved than males. As Delaunay says, "Precocity is a sign of biological inferiority." The higher tissues and organs also are much more slowly evolved, and much less prone to precocity, than the lower ones. This is especially true of the human brain, which appears not to attain its developmental maximum until late in life—even until the fiftieth year. It is hardly ever affected in cases of sexual precocity. Such considerations seem to show that precocity is often due to reversion.

The different types of sexual precocity in females may be classified as follows:—(1) Menstruation appearing prior to other signs of sexual evolution. (2) Precocious menstruation, with the early appearance of other signs of puberty. (3) Precocious sexual manifestations without menstruation. (4) Early conception and pregnancy. (5) Sexual precocity with abdominal tumour.

Transitory vaginal hæmorrhages in newly-born children, lasting a few hours or

several days, are so common that they may be regarded as physiological. Hitherto they have generally been considered "accidental," but for the following reasons they should be regarded as the prototype of the menstrual flux:—The discharge generally appears a few days after birth, and may last for any time up to 5 or 6 days; usually, however, the period is much less. As a rule the discharge does not recur, but in many instances it has been observed periodically before its final cessation. In a few cases it merges into regular menstruation, with the subsequent development of other signs of sexual precocity. Of like import are mature Graafian follicles, corpora lutea and recent ovarian cicatrices in the ovaries of newly-born infants. So also are the mammary changes met with in the young of both sexes shortly after birth. As the writer has pointed out in his work on "Diseases of the Breast," these changes resemble on a small scale those of normal lactation, and like them result in the secretion of milk.

The writer classifies the recorded cases as follows:—

(A) PRECOCIOUS SEXUAL DEVELOPMENT IN FEMALES (62 Cases).

In several instances children have been born with some or all of the signs of puberty. The following are some examples:—

Menstruation began at birth and continued regularly until the child died at the age of 4, when the *mammæ* and external genitals were like those of a pubescent woman. The necropsy showed that the internal sexual organs and pelvis were likewise prematurely developed (Campbell, *Northern J. of Med.*, 1845).

Menstruation began at birth and continued until the twelfth year, when other signs of puberty supervened. Somewhat later, after

strong emotion, the catamenia became irregular. The patient married at 20, and died at 27, from cancer of the uterus. (Bernard, *Lyon Méd.*, Aug. 14, 1887, p. 517).

Menstruation began at the fourth month, and soon became regular, each period lasting 4 or 5 days. At the age of 2 years and 7 months the general appearance was that of a girl at puberty. The breasts and external genitals were developed, and there was hair on the pubes. The child weighed 49 lb. and her general health seemed good. She was intelligent but irritable. (Vanderveer, *American Jour. of Obst.*, 1883, p. 1005).

The growth of a child was so rapid that by the ninth month she was double the normal size. Menstruation then began. At the eleventh month it appeared again, and the *mammæ* began to enlarge and hairs appeared on the pubes. Menstruation again occurred in the fourteenth and nineteenth months. In the latter the patient was 3 ft. 9 in. high and her chest measurement was 22 in. The breasts and external genitals were of pubescent type. There were indications of sexual desire. (*Lancet*, Nov., 1882).

PRECOCIOUS SEXUAL DEVELOPMENT WITH CONCOMITANT INTRA-ABDOMINAL TUMOUR (13 Cases).

Rein exhibited at the Kieff Obst. and Gynæcol. Soc. a girl, aged 6, in whom menstruation had supervened one year previously. The *mammæ*, external genitals, and pubic hair, resembled those of a girl of 14. There was considerable abdominal enlargement. A thick-walled and fluctuating ovarian cyst was successfully removed by laparotomy, and proved to be a multilocular cystoma of the left ovary. On the third day after the operation sanious vaginal discharge appeared (*Vratch*, 1894, No. 44).

PRECOCIOUS PREGANCY (15 Cases).

Molitor, in 1878, communicated to the Belgian Academy of Medicine, "*Un cas de précocité extraordinaire observé à Oberpallen chez une fille de 8 ans.*" This child was born with many of the external signs of puberty, including pubic hair. Menstruation supervened at the age of 4. At the age of 8 she was impregnated by her cousin, aged 37, and was subsequently delivered of a 3 months embryo with mole formation.

(B) PRECOCIOUS SEXUAL DEVELOPMENT IN MALES. (20 Cases).

White has related the remarkable history of Philip Howorth, who began to lose his infantile appearance at the age of 1 year, and soon resembled a growing boy. He became pubescent in the third year. At the age of 3 he was 3 ft. 4½ in. high and weighed 51½ lb. He had the genitals of a man, and was clever, strong and muscular. At the end of his sixth year he attained his full height, 5 ft. Subsequently growth quite ceased; thus at the age of 22, when he married, he was but little different from other persons of his own age. When last heard of his wife had been confined of a girl. He then showed no signs of premature decay (*Med.-Chir. Trans.*, I., p. 276).

DEUTSCHE MED. WOCH., Aug. 14, p. 591.

Glioma of the Cauda Equina.

By DR. FRANZ VOLHARD.

A man, aged 47, sought advice in Nov., 1901, for gastric symptoms rather than for an old standing bladder trouble. He suffered early in 1898 from frequent and difficult micturition. To empty the bladder he would place a hand on either side of the abdomen and press vigorously. Later in the year a peculiar sensation of pres-

sure at the lower end of the spine began and had persisted since. In 1899 there was impairment of the sexual functions. The left ankle became swollen. The swelling, which was painless, subsided under massage, and was replaced by atrophy of the muscles of the left foot and leg, so that the patient limped when walking. During 1900 all the symptoms became more pronounced. In 1901 locomotor ataxy was diagnosed, and after a course of baths at Oeynhausien there was great general improvement. But in Oct. and Nov., 1901, his condition deteriorated. The bladder was never emptied, the urine was occasionally turbid, the left leg grew weaker, and the dull sacral heaviness more marked. About the middle of Nov. constant unquenchable thirst appeared, with great dryness of the mouth, nostrils, and skin.

There was anorexia with nausea after each meal. The tongue was dry and coated, and there were a constant taste of urine in the mouth, and an odour of urine from the nose and skin. There was constipation. The bladder could be felt above the symphysis. The prostatic gland was not enlarged. The sphincter ani and perineum were relaxed, and the rectum was full of scybala which, as no enema was retained, required manual removal. The man could stand unsupported on the right leg, but not on the left. Romberg's sign was absent, and the pupils reacted both to accommodation and light. The other reflexes, both superficial and deep, were, with the exception of the patellar and cremasteric, diminished or abolished. External rotation of the left hip was weaker than that of the right, but internal rotation was equal on both sides. Abduction and extension were weaker on the left than on the right. Extension of the knee was equally vigorous on both sides, but flexion was weaker on the left. The

circumference of the left leg was 1 to 2 cm. less than that of the right. The left foot could be flexed dorsally, but feebly, and extended not at all. The left toes could be feebly extended, but flexion was abolished. The disturbances of sensibility were slight. Contact with a fine pointed camel-hair brush was not perceived over areas roughly corresponding to (1) the sacrum, (2) above the left knee, and (3) over a narrow strip along the outer side of the left leg, where heat and cold, and blunt and pointed objects were also indistinguishable. Retention of urine was the most prominent symptom. Even though the patient micturated 12 or 16 times in the 24 hours nightly catheterism usually yielded 35 oz. of urine. Unless the desire to micturate was immediately gratified urine escaped drop by drop. Similarly, defecation was only possible with great straining. The urine was increased and contained a few pus cells and a trace of albumin. The electrical reactions of the muscles corresponded to the degree of wasting, and there was no R.D.

DIAGNOSIS.—Locomotor ataxy was clearly absent. An affection of the left sciatic nerve was excluded owing to the preponderance of bladder and rectal symptoms, and of the lumbo-sacral plexus by the preponderance of motor over sensory disturbances. The lesion was, therefore, in the vertebral canal, either in the cord or cauda equina. The slow evolution of the symptoms pointed to a non-malignant tumour. A knowledge of the functions of the spinal nerve-roots localised the lesion below the fourth lumbar nerve. For paralysis of the detrusor urinæ and levator ani, and paresis of the spincter vesicæ and sphincter ani were connected with the fourth and fifth sacral nerves, the impotence with the third and second sacral nerves (centres for ejaculation and erection) the paresis of the

external rotators and the flexors of the left thigh with the first left sacral nerve, the weakness of the left abductors, the flexors of the left knee, and the dorsal flexors of the left foot and toes with the fifth lumbar nerve, the paralysis of plantar flexion, and paresis of the elevators of the inner margin of the foot with the second sacral nerve. The fourth lumbar nerve supplies the extensors of the knee and probably the elevators of the external border of the foot, the third lumbar nerve the adductors and internal rotators, and the second lumbar nerve the flexors of the hip, all of which movements were intact. Of the reflexes the vesical and rectal reflexes were absent, and the Achilles reflex was absent on the left side, and feeble on the right. The nerves implicated were the third to the fifth sacral. The plantar reflex (first and second sacral nerves) was bilaterally almost abolished. The cremasteric reflex (first to third lumbar nerves) and the patellar reflex (fourth lumbar nerve) were present on either side. The patch of hypæsthesia over the sacrum corresponded to the right and left fourth and fifth lumbar nerves, the strip on the outer side of the left thigh to the left fifth lumbar, and on the outer side of the left leg to the left second sacral. Thus the motor function of the fifth lumbar to the second sacral on the left side, and of the third to the fifth sacral nerves on both sides was involved, the sensory function of the second sacral to the fifth lumbar on the left side, and of the fourth and fifth sacral on both sides, was slightly disturbed, and the reflex conductivity of the third, fourth, and fifth sacral nerves on both sides (possibly also of the first and second) was abolished. But in localising the level of a tumour in the lower part of the vertebral canal it is not much help to know that it is not higher than the origin of the fifth lumbar nerve.

For the spinal cord ends opposite the first lumbar vertebra, and though the fifth lumbar nerve arises on a level with the twelfth dorsal vertebra it does not leave the vertebral canal till just above the first sacral vertebra (Fig. 1). An intravertebral lesion might, therefore, lie anywhere between these points. At first sight there appeared to be as many points in favour of the tumour being within the conus medullaris itself as in the cauda equina. For no case of compression of the cauda has been

reported with similar symptoms, and the most characteristic of all, the sensory disturbances, which have made caudal compression and "paraplegia dolorosa" synonymous, were absent. But if the lesion involved the left half of the cord at the level of the fifth lumbar nerve, with consequent interruption of the centrifugal motor paths below, the centripetal sensory paths would also have been seriously involved. For a tumour of the cord to explain the symptoms it would be necessary for it to compress directly all the segments of the anterior horns involved, and to have been narrow above so as to compress only the left side, and wider below so as to compress also the right side. But a growing tumour of this extent would, in the course of 4 years, have produced more disturbance of sensibility, more muscular atrophy, and, probably, symmetrical paralysis. Thus the lesion was assumed to be one of the cauda equina, as this alone explained all the symptoms. Immediately below the conus medullaris the anterior and posterior nerve-roots of the lower lumbar and upper sacral nerves are still slightly separated, while the anterior and posterior roots of the lower sacral nerves are crowded together (Fig. 2). It is, therefore, obvious that a tumour, for instance an exostosis, represented in the diagram by a black line, running antero-posteriorly immediately below the conus medullaris, might compress merely the motor roots of the left fifth lumbar and upper sacral nerves, but would probably involve the anterior and posterior roots of both right and left lower sacral nerves, which arise where the spinal cord narrows. The unusually slight extent of sensory disturbances thus became explicable, and a tumour just below the conus was diagnosed and its removal opposite the first lumbar vertebra decided on. A tumour 4 vertebræ lower would have produced similar

FIG. 1.

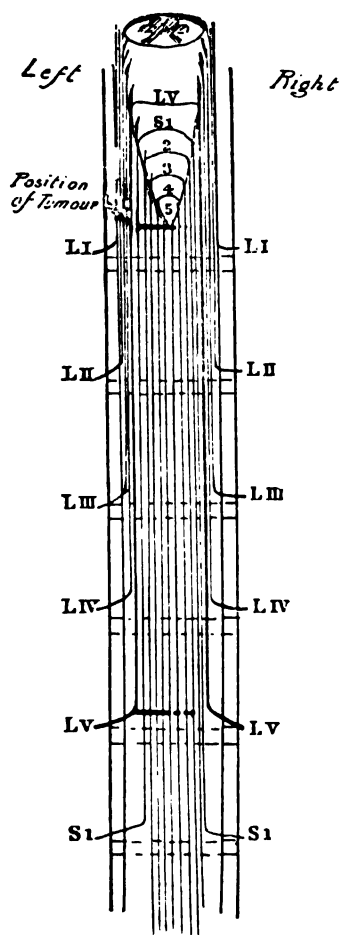


Diagram of the course of the nerves in the lumbar vertebral canal.

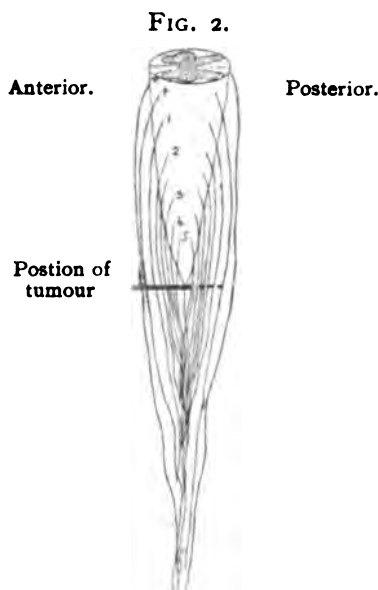


Diagram of lateral view of the conus medullaris.

motor symptoms, but would have involved the sensory roots more equally (Fig. 1). The patient went home to settle his affairs and returned a few days later so ill that the operation was abandoned. Death from uræmia secondary to cystitis and pyelitis occurred on Feb. 9, 1902.

NECROPSY.—On opening the subdural space opposite the first lumbar vertebra a tumour was found immediately below the conus medullaris. Though situated posteriorly the tumour had in its forward growth merely displaced the posterior nerve roots, while the anterior roots were compressed against the bony wall. Its removal would not have been difficult, and would, at an earlier stage, have probably been followed by complete recovery.

The case shows that the determination of the level of intravertebral tumours is occasionally possible even when they affect the cauda equina. A correct diagnosis was made by Laquer, of Frankfort, in 1891, and the patient

was cured by removal of a cavernous lymphangioma which compressed the cauda equina within the sacrum. Of tumours situated immediately below the conus medullaris the writer has collected 6 cases. None was diagnosed during life. Pain (paraplegia dolorosa) was usually a prominent symptom.

PRACTITIONER, Sept., p. 267.
The Operative Treatment of Epiphyseal Fractures.

By W. ARBUTHNOT LANE, M.S.

There is no class of fractures more difficult to treat by operation than separation of the epiphyses, especially those of the growing line of the humerus. Fortunately these are rare compared with those of the shaft, which are fairly common. Fractures about epiphysal lines differ entirely from those of the long bones, in which with moderate patience and skill a perfect result can always be obtained by operation, providing comminution is not excessive. Often some fracture of the shaft complicates that through the growing line, and renders it exceedingly difficult, if not impossible, to restore the displaced fragment to its normal position.

Fig. 1 represents a fracture through the growing line of the upper end of the humerus with considerable displacement of the epiphysis. The shoulder was much deformed, and the movements permitted in the joint were very limited. The displacement was so extensive that the writer feared that the limb would be permanently shortened. Associated with the displacement was evidence in some of the radiographs of comminution of the adjacent shaft. After forcible but useless manipulation the writer determined to attempt to obtain union by operation a more useful arm, knowing that there were great difficulties, particularly

16 months

lower



16 months after the fracture.



lower epiphysis of the humerus



Fig. 6. The elbow joint and humerus 3 years after the injury. The elbow is only slightly flexed.

account of the comminution and the interval of 3 weeks since the injury. The seat of fracture was freely exposed by a vertical incision along the anterior part of the outer aspect of the shoulder. The deltoid was divided along the length of the incision, care being taken not to injure the circumflex nerve. By cutting through the deltoid transversely for some distance on either side just below its origin and hooking aside the muscular flaps, the displaced epiphysis and the upper end of the shaft were exposed. A piece of bone measuring $\frac{3}{4}$ in. in length by $\frac{1}{2}$ an in. in breadth lay loose in the wound and was removed. With great difficulty the epiphysis was elevated on to the end of the shaft into a good, but not perfect position, and the loose fragment of bone was restored to its place. The chief difficulty in effecting accurate apposition of the fragments was the friability both of the crushed end of the shaft and of the epiphysis. It did not seem wise to attempt to wire the epiphysis to the shaft, and the former fortunately showed no tendency to displacement after it had been put in position. Probably the bone could have been restored perfectly if the operation had been done immediately after the injury. After 4 weeks movements, excepting flexion, were normal. Flexion was slightly limited by the anterior margin of the upper end of the shaft, which projected forwards a little beyond the epiphysal margin. This limitation will in time greatly diminish, if not disappear. Two serious disadvantages result from these fractures—deformity and abnormal range of movement, and relatively short life of the joint.

The lower end of the humerus is much more liable than the upper to be exposed to a force greater than it can sustain without yielding, for in a fall upon the partly flexed arm, the whole force is exerted in a backward and

upward direction upon the lower epiphysis chiefly through the head of the radius, but also through the ulna. The fact that the greater part of the force passes through the radius to the radial head of the humerus explains the tendency to the outward displacement of the epiphysis which is not uncommonly associated in a varying degree with the backward displacement, and which renders it so much more difficult to obtain a useful and durable elbow joint. When the displacement of the epiphysis is alone backwards and there is no considerable fracture of the shaft a fair arm can usually be obtained by manipulation, the elbow being forcibly flexed in order to enable the coronoid process to exert a leverage action upon the lower end of the shaft, and to displace it backwards upon the epiphysis. If this be done thoroughly the over-extension of the elbow-joint which results from rotation of the epiphysis around a transverse axis may usually be greatly reduced, if not removed. The manner in which this is done is shown by Figs. 3—6. These radiographs well illustrate the extensive and remarkable structural changes in form which the whole shaft undergoes in consequence of any alteration in the relation of its epiphysis to the shaft. The changes well illustrate some of the mechanical principles which govern the development of the skeleton. Mr. Lane saw the child for the first time in July, 1899. She was 6 years old. A month previously she sustained an injury to the elbow joint. This had been treated with a right-angle elbow splint, and afterwards with a straight splint. There was much deformity of the elbow, flexion being limited to the extent shown in Fig. 2, while there was considerable over-extension owing to rotation of the lower fragment around a transverse axis. There was little outward displacement of the epiphysis.

As a long interval had elapsed since the injury, and as callus rapidly forms in these fractures (see Fig. 2), Mr. Lane did not urge any operation. The arm was massaged regularly, and a course of exercises was followed with the object of gradually increasing the range of flexion and of rendering the fit of the joint as secure as possible under the circumstances. Fig. 2, taken on July 24th, 1899, shows the backward and upward displacement of the lower fragment, which includes the entire epiphysis. Its upper surface looks almost directly upwards and but slightly forwards, and is irregular. Extending from the whole of that portion of the posterior surface of the shaft which is shown in the illustration to the upper surface of the fragment is a narrow, dark band of callus, which rapidly increases in breadth as it approaches the epiphysis. Projecting downwards from the lower end of the shaft is a jagged process of bone which by its impaction upon the coronoid process and head of the radius limits flexion to the extent shown in the radiograph.

Fig. 3, taken on Sept. 23, 3 months after the injury, shows very definite alterations. The narrow, indistinct feebly-marked line of callus has increased considerably in breadth and density, and extends up the posterior surface of the shaft beyond the limits of the radiograph. Its density apparently almost or quite equals that of the shaft, which itself appears slightly lighter in colour than it was 2 months before, and therefore presumably of a lesser density. The lower end of the shaft has lost its projecting extremity, and its surface has changed in shape, while the callus which filled the gap between the shaft and epiphysis has been absorbed in great part, so that an angular interval exists into which the already slightly blunted summit of the coronoid process is

received in flexion, which is now much more complete than it was.

In Fig. 4, taken in Dec., the density and breadth of the band of callus has increased still more in proportion to that of the shaft. The lower end of the shaft has been absorbed so that its limit occupies a higher level as compared to the epiphysis than it did. It is also deeply indented to receive the still more altered coronoid process, while the range of flexion is increased correspondingly.

Fig. 5 was taken in Oct., 1900, 16 months after the fracture took place. In it the old shaft is seen as a comparatively pale band showing no evidence of compact tissue. Its lower extremity has been removed for a considerable length, and now takes no share in the articulation with the coronoid process. The callus formation has increased in extent and breadth, probably reaching to the upper limit of the shaft. Apparently it transmits the large proportion of force, and the original shaft is of little service. The coronoid process is again altered in form to fit a cavity developed in the portion of the lower fragment above the epiphysial line. The angle formed by the forearm with the humerus in extreme flexion is less than it was, but the amount gained in the 10 months is relatively small as compared with that in the previous shorter intervals.

Fig. 6 represents the condition of the arm in May, 1902, 3 years after the injury. Flexion is slightly impaired, while extension is exaggerated. Pronation and supination are perfect. There is some broadening of the humerus across the condyles and increased formation of bone above them, particularly on the face of the surface above the external condyle. The changes that have taken place in the shaft are a continuation of those already observed. An entirely new

shaft has been formed which has acquired the form, structure, and function of the original one, while the old one has practically disappeared. When the child becomes an adult, probably no vestige of the latter will remain.

In fracture through the epiphysial line, and, indeed, of any part of a bone, the perfection with which normal form and function are restored, varies inversely with the age of the subject. Hence in the young subject the necessity for operation is less than in the adult. In the above case time would have been saved and a perfect result would have been obtained if the lower fragment had been, in the first instance, sutured to the shaft in its normal position. This could have been readily done, as there was enough dense bone in contact with the epiphysis to hold a wire securely. The chief difficulties in the operative treatment of separation of the epiphyses are the friability of the epiphysis in the young child. Unless great care be taken the thin silver wire, which is the only possible uniting medium, tears readily through the cartilage of the epiphysis, often already fissured or fractured, when its slack is being taken in, or when, after it has been secured, strain is exerted on it in bandaging the part on a splint.

Fig. 7 illustrates the considerable outward displacement of the lower epiphysis which so frequently accompanies its backward displacement. In this case, as so often happens, the child did not come under the writer's care till 16 days after the injury, which made accurate replacement of the fragment still more difficult. After a long and tedious operation the fragment was attached to the shaft by a wire connecting their inner limits. If the case had come under the writer's observation immediately after the injury a

perfect result could probably have been obtained.

In the treatment of these cases by operation no time should be lost. With greater care as to cleanliness the surgeon should be able to successfully perform these simple operations. The present attitude of conservatism exhibited by most hospital surgeons is a more or less unconscious recognition of their inability to perform such operations safely.

See also "The Operative Treatment of Fractures near the Elbow-Joint" ("REVIEW," p. 306).

AMERICAN MEDICINE, Aug. 2, p. 173.

Embolie Pleurisy after Operation.

By G. BROWN MILLER, M.D.

In the gynæcological department of the Johns Hopkins Hospital from 1890 to 1901 inclusive 16 cases of post-operative pleurisy occurred. Cases of pleurisy accompanying recognized pulmonary tuberculosis are not included. In at least one-half of the cases the pleurisy originated in pulmonary embolism and was probably the result of infarction of the lung. Thrombosis of the crural vein, some of its branches, or one of the pelvic veins was in most cases the apparent source of the embolus. The significant symptoms of post-operative pleurisy are not appreciated. Many cases of pleurisy, with or without effusion, termed tuberculous, rheumatic, etc., result from pulmonary embolism,

Pulmonary embolus which does not cause too rapid death produces, under favouring conditions, hæmorrhagic infarction which is usually accompanied by pleurisy. In most cases there are signs of pleurisy—a friction

rub, and, sometimes, effusion. After operations upon the abdominal viscera, especially in cases of carcinoma, myoma, large ovarian tumours, and pelvic inflammations, the conditions favour thrombosis in the peripheral veins, and the formation of a hæmorrhagic infarction when pulmonary embolism occurs. According to Welch, the conditions are chronic passive congestion of the lungs from valvular or other disease of the left heart, weakness of the right heart, fatty degeneration of the heart, general feebleness of the circulation, pulmonary emphysema, and infective diseases. Pozzi states that many abdominal tumours cause augmented vascular tension and react on the cardiac muscle, producing hypertrophy with or without dilation. Hofmeier reports 9 cases of death after operations for abdominal tumours, in all of which there were found either fatty degeneration or brown atrophy of the heart. Mahler reports 14 cases of fatal pulmonary embolism following labour or gynæcological operations. In 12 a necropsy was made, and in 10 pathological changes in the heart muscle were found.

Mahler first called attention to the value of sudden sharp pain in the chest, frequently accompanied by dyspnœa and increased rapidity of the pulse, in diagnosing threatened serious pulmonary embolism. He regarded these symptoms as due to the impaction of small emboli in the terminal arteries of the lungs, and pointed out that larger emboli might occur and consequently the practitioner should be on his guard. Pinard the same year wrote concerning the value of thoracic symptoms in predicting the occurrence of phlegmasia alba dolens (*Bulletin Méd.*, May 10, 1895), "When, during convalescence, after labour there is a stitch in the side think of pulmonary embolism, of small emboli, which

are followed after the lapse of 2 to 8 days by phlegmasia alba dolens. Of 12 cases in which phlegmasia supervened it occurred 5 times in one leg, 6 times in both legs and once in the arm." The following cases were observed in the Johns Hopkins Hospital:—

CASE 1.—The patient was a woman, aged 46. Multiple myomectomy was performed on Oct. 31. Eleven days after the operation she complained of sharp, lancinating pain in the lower right thorax, and there was a short hacking cough with little expectoration. The temperature rose to 101°. Examination of the chest revealed decreased vocal fremitus, dulness as high as the eighth rib behind, and a rough friction sound. Aspiration yielded a little clear fluid. On Nov. 2, the cough had disappeared, but there was still an area of dulness extending to the ninth rib. The left leg was swollen and tender. This condition continued for 10 days. Some thickening of the pleura remained.

CASE 2.—Hystero-myomectomy was performed. On the eighth day the patient complained of severe pain in the left chest synchronous with respiratory movements. The respirations were short, shallow, and somewhat spasmodic. At the upper border of the eighth rib on the left side a pleuritic friction sound was heard over an area as large as the palm. The chest was strapped, which gave great relief. Next day the temperature was 102° and pulse 104. On the fourteenth day the signs of pleurisy had disappeared. On the nineteenth day while at stool the patient fainted. The pulse was 120 and weak. When she recovered consciousness she complained of a heavy aching pain over the sternum. There were dyspnœa, irregular action of the heart, cold hands and feet, and dark spots before the

eyes, and ringing in the ears. The symptoms increased for several hours. As examination of the lungs was negative, secondary hæmorrhage was diagnosed and an exploratory laparotomy performed. This showed nothing and the diagnosis was changed to pulmonary embolism. Phlebitis of both femoral veins followed.

There was probably thrombosis of the pelvic veins which gradually extended, finally involving the femorals. The pleurisy was evidently the result of a small pulmonary embolus with its resulting infarction, the second attack of an embolus of considerable size.

CASE 3.—On the sixth day after ovariectomy there were symptoms of localised pleurisy, i.e., pain in the axilla increased on breathing, slight dulness on percussion, and a to-and-fro friction rub. The pulse rate increased from 96 to 120, and remained rapid for several days. The temperature was not elevated. The symptoms lasted several days.

CASE 4.—Hystero-myomectomy was performed. On the eleventh day the temperature rose from 99° to 101°, and the pulse from 90 to 130. There was a sudden sharp pain in the right axilla, which was more severe on deep inspiration. Pleuritic friction sounds were heard over the seat of pain. Four days later there were pain and stiffness of the right leg, which was somewhat œdematous and had a glazed appearance. A fortnight later both the pleurisy and phlebitis had disappeared.

The following facts point to embolism—the limited area of the pleurisy, the sudden onset of symptoms, the rapid recovery, the sequence of most of the cases after operations for carcimona or myoma, the occurrence of the pleurisy in from one to 3 weeks after operation and the phlebitis or symptoms which could only be due to a pulmonary embolus of larger size. The cases could hardly

have been due to tuberculosis because the pleurisy usually disappeared in a few days, and there was never any evidence of tuberculosis. In the following recorded cases there were similar symptoms, and the diagnosis was confirmed by necropsy.

Schachtler (*Beitrage zur Emboli der Lungenarterie.*) Zurich, 1895, reports a case of a woman with a uterine fibroid, who, on Nov. 9, had an attack of dyspnœa, accompanied with sudden sharp pain in the right chest. On Nov. 20 she died of pulmonary embolism. The embolus came from a thrombus of the uterine veins.

Mac Lennan (*Edinburgh Med. Jour.*, 1900, viii., p. 422) reports a case of pulmonary embolism occurring 24 hours after the removal of the breast. The symptoms were pain in the left infrascapular region, and slightly hurried respiration. Friction sounds and pneumonic crepitus were heard over the seat of pain. There was also pain in the right thorax. The temperature rose, and there were signs of pneumonia. The necropsy showed numerous hæmorrhagic infarctions in both lungs, the result of embolism. One of these infarctions was accompanied by pleurisy.

Merklen (*Bulletin de la Soc. Méd. des Hôp. de Paris*, Nov. 15, 1900). A primipara, 10 days after confinement, was seized with violent pain in the chest, which was accompanied by cough and bloody sputum. Some days later she had another attack. After a brief delay there appeared a phlegmasia in one leg, and after some days a similar condition in the other leg. She died from pulmonary embolism 23 days after the first attack.

If after a pelvic operation or labour pain in the chest or dyspnœa come on suddenly pulmonary embolism should be suspected and rest enjoined until the danger of further and perhaps fatal embolism is past.

LANCET, Sept. 27, p. 860.

Paralysis Complicating Gonorrhœa.

By T. R. GLYNN, M.D., F.R.C.P.

Gonorrhœa is rarely attended with complications involving the nervous system. In 1863 Stanley described certain paraplegic affections in gonorrhœa associated with bladder or kidney trouble. He thought that the disease of the urinary organs caused a morbid impression on the cord through sensory nerves which by reflection downwards impaired sensation and motion, producing what he termed urinary paraplegia. Gull, in his lectures on paraplegia, relates 3 cases of loss of power of the lower limbs accompanying gonorrhœa which he thought was due to inflammation of the cord produced in the same way as the arthritis. Ricord observed symptoms of cerebral and spinal compression during the progress of gonorrhœal arthritis and the symptoms of paralysis seemed to vary with the extent of effusion in the joints as if it depended on the same mechanism. Charcot looked on such cases as examples of myelitis excited by an ascending neuritis originating in the nerves of the inflamed bladder or kidneys. He also related a case of chronic gonorrhœal arthritis and bursitis with spinal symptoms of a different character—namely, weakness of the legs, muscular atrophy, and spastic disturbance; the arthritis was most marked in the hips, knees, ankles, metatarsal and phalangeal joints, and there was inflammation of the bursæ of the soles of the feet. He did not believe that the nervous disturbance was due to a specific infection resembling that of the joints, but that it arose from a reaction on the trophic centres of the cord, of excitations to which the nerves in relation with the diseased joints were subjected. The symptoms referred to may be

met with in any form of chronic arthritis. Fürbringer has published a case of cerebro-spinal meningitis with gonorrhœa. Fluid obtained by lumbar puncture contained the gonococcus and at the necropsy the gonococci were found in the exudation of the inflamed membranes. In infections by pyogenic organisms peripheral neuritis is not uncommon; it may, for example, be provoked by a suppurating wound. Multiple neuritis may be associated with empyema and cases of neuritis from so simple a cause as pyorrhœa alveolaris have been described by Dr. Hunter ("REVIEW," Vol. IV., p. 87). Fournier, Raymond, and others have directed attention to the occasional development in urethritis of neuritis of the sciatic, crural, or cranial nerves, causing neuralgias or paralyses. Cerebral symptoms, such as hemiplegia and aphasia, due to embolism, following endocarditis or phlebitis, may also develop during gonorrhœa.

A man, aged 48, was admitted to hospital on Feb. 13, 1894. He had always been active and temperate. He had gonorrhœa at 28 and again a month before admission. On Feb. 3 he noticed some weakness in walking—difficulty in raising the feet, feebleness in the knees, and tingling in the feet. Next day the weakness had increased and he staggered; there was tingling in the hands. On the third day he could stand only with support. There were great weakness of all the muscles of the lower limbs and almost complete paralysis of the muscles of the anterior tibio-fibular region. On the fourth day the hands became weak and in a day or two the muscles of the arms and trunk were involved and he took to bed. Ptosis developed on the seventh day. The urethral discharge had been somewhat profuse, but had almost ceased before the nervous symptoms began.

In bed he was perfectly helpless, being unable to move his head, turn, or raise himself. Owing to double ptosis the eyes were half closed; the pupils were equal and reacted normally to light and accommodation. There were nystagmus of the left eye when directed far to the left and paralysis of the internal rectus of the right eye. The arms were extended by the sides and the fingers were flexed on the palms. The strength of grip was 3lb. and the power of extension of the fingers slight. He was just able to flex and to extend the forearm at the elbow, and could only approximate the thumb to the first and second fingers. He could slightly flex and extend the hands and also partially pronate and supinate them. He could not abduct the arms. There was great weakness of the deltoids, the sternomastoids, levator anguli, and other muscles of the neck and shoulders. The tendon reflexes were absent. There was a sensation of "pins-and-needles" in the hands. Respiration was largely diaphragmatic with some retraction of the lower chest. The legs were extended and flaccid, the feet were extended, the plantar arch was exaggerated, the first phalanges of the toes were extended, and the distal phalanges were flexed (indicating paralysis of the interossei and lumbricales). The patient could not flex feet, move the toes or raise the heels off the bed, but he could draw them up for a short distance on bending the knees and could adduct the limbs to some extent, but could not abduct them. Sensibility was normal. Knee-jerks and all superficial reflexes were absent. The heart was normal.

On the night after admission he was very restless and slightly delirious, constantly desiring his limbs to be moved and complaining of a feeling of pressure round the

umbilicus and also of thirst. Urine was once passed involuntarily. Salicylate of soda, mercurial inunctions, and counter-irritation by mustard over the spine were ordered. On the 17th the respirations, which were entirely abdominal, were 34, and the pulse was 120. He spoke with effort. He became delirious. The limbs became weaker, the paralysis of the left arm and leg being almost complete. The ptosis became absolute. He could not direct his eyes upwards, downwards, or inwards, but only outwards. The tongue was dry, thirst was incessant, but the temperature was normal in the morning and almost invariably a little elevated at night (99.4°) till the 21st. Urine and fæces were passed involuntarily. The sphincter ani relaxed on examination. A bed sore appeared on the sacrum and ecchymoses formed on the heels and between certain toes that were in close contact. The gonorrhœal discharge became noticeable and pus and a little albumin were found in the urine. Gonococci were detected in the pus. Examination of the blood gave a negative result.

Five days after admission he became rational. Respiration improved. There was a "flannelly" feeling in the hands, also an aggravation of the old sensation of "pins-and-needles," and the legs felt as if they had been bruised. There was some tenderness of the calves and over the external popliteal nerve. There was marked hypæsthesia, especially over the limbs. Any attempt to move the right arm—i.e., the better of the two—caused tremor from contractions of the pectoralis major. There was also some tremor of the muscles of the arm when at rest and of the facial muscles. On the 22nd, after a night of pain in the left knee and ankle, there was considerable effusion in the knee which became tender but not red. This condition of the knee lasted for 5 days.

Early in March atrophy of the muscles was apparent and was especially marked in the extensors at the back of the forearm, the thenar and hypothenar eminences, the deltoids and pectorals, the muscles of the thighs, the flexors of the feet, and the gastrocnemii. The tremor continued. There was mechanical irritability of many muscles. On March 5 in the right arm the long extensors of the thumb reacted to the faradic current, but the extensors of the fingers did not; the small muscles of the thumb reacted. The extensors communis and indicis did not react. Several muscles gave reaction of degeneration, such as the extensors communis of both arms and the tibialis anticus and extensor communis of the right leg, while no reactions were obtained over the same muscles of the left leg. Improvement was first noted on the 6th, when there was an increased power of flexing the forearm and a stronger grip. There was also some ability to flex, extend, abduct, and adduct the feet. By the end of March the ptosis had disappeared and the movements of the eyeballs were normal. In April the strength of grip of the right hand was 20lb., of the left hand 35lb. He could just stand alone and take a few steps with support. Recovery became complete in June.

In the earlier period the symptoms were those of ascending paralysis, and in the later those of multiple peripheral neuritis. The levator palpebræ and all the external muscles of the eyeballs were paralysed, with the exception of the external recti. Implication of the facial or ocular muscles in multiple neuritis is unusual. The orbital and facial nerves are more frequently involved in Landry's paralysis and the serious forms of toxæmic paralysis as in post-diphtheritic neuritis than in the polyneuritis of alcohol

and of the organic poisons. Raymond and others describe cases of toxæmic neuritis with implication of the cranial nerves. The writer has seen Landry's paralysis accompanied by ophthalmoplegia and blindness and also by facial paralysis. The peculiar character of the orbital paralysis originated in one of two ways—either there was a lesion of the nucleus of the fourth nerve and the adjoining posterior part of the nucleus of the third nerve (the anterior part of this nucleus, *which innervates the iris* and the nucleus of the sixth nerve not being involved), or the paralysis was due to a neuritis sparing the sixth nerve and those fibres in the third nerve concerned with the functions of the iris but implicating all the other fibres in the trunk of the third nerve and also involving the fourth nerve. A similar distribution of paralysis occurs in certain cases of ophthalmoplegia externa, from degeneration of the nuclei of the nerves concerned. Much difference of opinion has prevailed as to the nature of the lesion of the nervous system in Landry's paralysis, but the view that best explains the present case is that there was a toxic or infectious process involving the peripheral motor neuron. Sometimes the ganglion cells are more particularly involved and at other times the peripheral fibres.

ANNALS OF SURGERY, Aug.
Intestinal Obstruction from Gall-Stones.
 By H. L. BARNARD, M.S., F.R.C.S.

CASE 1.—A married woman, aged 37, was sent to hospital on Jan. 13, 1901, with a diagnosis of intestinal obstruction. For 9 months she had suffered from an aching pain in the right side of the abdomen, which prevented her from lying on that side. This

pain was at times so severe as to cause nausea. On Jan. 9 she was suddenly seized with a "gripping" pain in the right side of the abdomen below the ribs. On Jan. 10 she took a purge, and next day the bowels acted several times, but the pain was not relieved. After this she passed neither *fæces* nor flatus, but she suffered from tenesmus. Incessant vomiting commenced on Jan. 12. The vomit was profuse, and from the first brown and *fæcal*.

The abdomen was flaccid and neither distended nor tender. The patient complained of great thirst, and about an hour after admission vomited dark, *fæculent-smelling* matter. Per vaginam a mass, which was taken to be *fæcal*, was felt in the situation of Douglas's pouch. The rectum contained some *fæces*, and the same hard mass could be felt above and in front. Three enemata, each containing an ounce of turpentine in a pint of soap-and-water, were given at intervals of 2 hours. The first brought away a little *fæcal* matter. The other two were without result, and the hard mass could still be felt from the rectum. The vomiting was now more urgent and the general condition had not improved.

The abdomen was opened. A coil of congested and distended small gut projected. The empty coil of ileum entering it was drawn out of the wound and rapidly followed up. About 5 feet from the ileo-cæcal valve the gut contained an ovoid, hard mass. The gut was empty and much contracted below the stone, whilst above it was greatly distended and congested. The sudden narrowing of the gut formed a kind of septum, on which the stone rested. The coil containing the stone was drawn out of the wound and packed round with sponges. It was then emptied of *fæcal* matter and clamped above and below. A short incision was made in

the length of the gut and the stone squeezed out. The incision was closed by a continuous suture of No. 1 silk, through the peritoneum, muscle, and mucous membrane: the mucous membrane was too thin to be sewn separately. The wound was invaginated by interrupted Lembert sutures. The gut was well washed out with hot saline solution and returned to the abdomen. The abdominal wound was closed with through and through silkworm-gut sutures without a drain. The bowels were opened on the second day by enema. Recovery followed. The calculus was egg-shaped, and measured $2\frac{1}{2}$ in. in length, and $1\frac{1}{8}$ in. in diameter. The structure was lamellated, but the central part, of nearly pure cholesterin, had re-crystallized into a stellate arrangement.

CASE 2.—A woman, aged 63, was admitted on June 16, 1901. She had suffered for years from obscure pains in the right hypochondrium, but she had never been jaundiced. In the summer of 1900 she had a severe attack of pain in the region of the liver, accompanied by continuous retching, but not by actual vomiting. Her doctor told her the attack was due to the passage of a gall-stone. The present attack was apparently produced by a purgative. On June 10 she took a pill, which acted thoroughly next day. On June 11, at 11 p.m., she was seized with violent pains in the hypochondrium, and with profuse and continuous bilious vomiting. Next morning she improved considerably. The sickness was much less. The colicky pains were, however, nearly as bad, but had moved to the umbilical region. An enema gave good result. On June 13 she was still retching, and the vomited matter was now brown and offensive. Next day an enema produced a slight result; she was much better; the vomiting almost ceased, and she obtained some sleep. On June 15 she was much worse, and the vomiting was distinctly *fæcal*.

She had bronchitis, and the pulse was rapid and feeble. There was no distention and very little tenderness. Rectal and vaginal examination were negative. Acute intestinal obstruction from gall-stone was diagnosed on the following grounds:—(1) The patient was an old woman. (2) The definite history of previous hepatic pain and vomiting. (3) The history that the pain began in the hepatic and shifted to the umbilical region. (4) The early profuse and bilious vomiting which remitted, and later became fæcal. (5) The late and incomplete constipation. (6) The absence of distention, which pointed to an obstruction of the small intestine. (7) The peristaltic character of the pain which pointed to incomplete obstruction and not to strangulation.

When the abdomen was opened congested and dilated coils of small intestine presented, and some blood-stained fluid escaped. A large calculus obstructed the ileum. The stone was removed. Before the belly was closed the contents of the intestine were heard gurgling past the obstruction. A stomach-tube was passed and several pints of fæculent fluid were removed from the stomach, which was then washed out. The patient's condition was very bad. She was collapsed and had a continuous rattle in her throat. Next morning she was cold, blue, and delirious, and her respiration was 48 to 52, and temperature 100°. There was profuse diarrhœa and death occurred 24 hours after the operation.

At the necropsy incision in the gut was found soundly closed. The predisposing causes of death were found in small, contracted, granular kidneys, a fat and flabby heart, and an atheromatous aorta. The duodenum was hung up by adhesions to the neck of the gall-bladder. It passed from the pylorus 1 in. upwards and to the right, and was

adherent to the middle of the left border of the gall-bladder. It then passed in a loop behind the gall-bladder and was again adherent to the right side of the neck of that viscus. Here was a fistula bimucosa. The calculus, which had been taken from the ileum, could be worked up the duodenum and through this fistula into its old position in the gall-bladder. The gall-bladder was found divided into four loculi, separated from one another by dense fibrous septa, communicating by orifices of not more than a $\frac{1}{4}$ of an in. in diameter, and containing calculi (Fig. 1). The cystic duct was completely obstructed by a calculus.

CASE 3.—A woman, aged 68, was admitted on Sept. 11, 1901. Apparently her illness began 2 months before with severe abdominal pain and jaundice. Five days before admission she became acutely ill with profuse bilious vomiting and severe abdominal pain. For two days she had passed no motion. She was collapsed and nearly pulseless. An enema

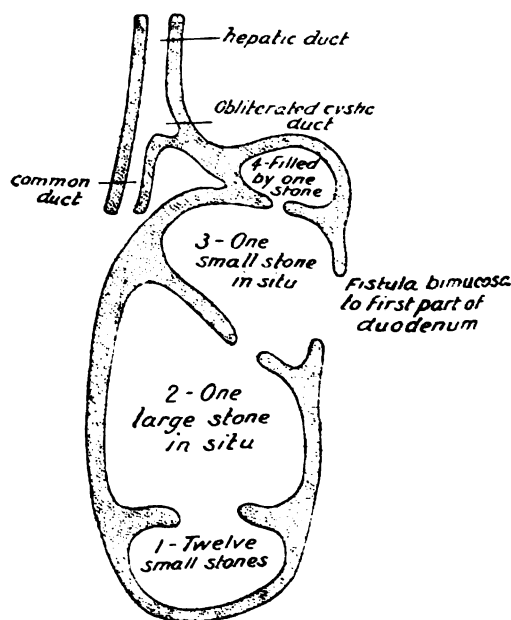


FIG. 1.—Diagrammatic view of gall-bladder and septa

produced a small result. The abdomen was soft and voluminous but not distended or tender. Under stimulants and a coffee and brandy enema she rallied a little in 4 hours. Intestinal obstruction from a gall-stone was diagnosed.

Laparotomy was performed under eucaïne local anæsthesia. A congested and greatly distended coil of intestine was followed, and a large gall-stone was found in the gut and removed. To give the best possible chance of recovery the gut was drained at the point of suture. A Paul's tube was tied in and fixed in the upper angle of the wound, and

the remainder sutured with silkworm gut. The patient improved, passed fluid fæces freely from the tube, but lived only 48 hours. At the necropsy the point of obstruction was found 10 feet from the ileo-cæcal valve. The calculus was large, rough, black, and barrel-shaped. The duodenum was curiously twisted, and inverted. The stomach, pylorus, and first part of the duodenum had apparently been forced downward, so that the second part ran up instead of down, and the duodeno-jejunal flexure and its suspensory ligament (muscle of Treitz) were on a much higher level than the pylorus and first part of the duodenum (Fig. 2).

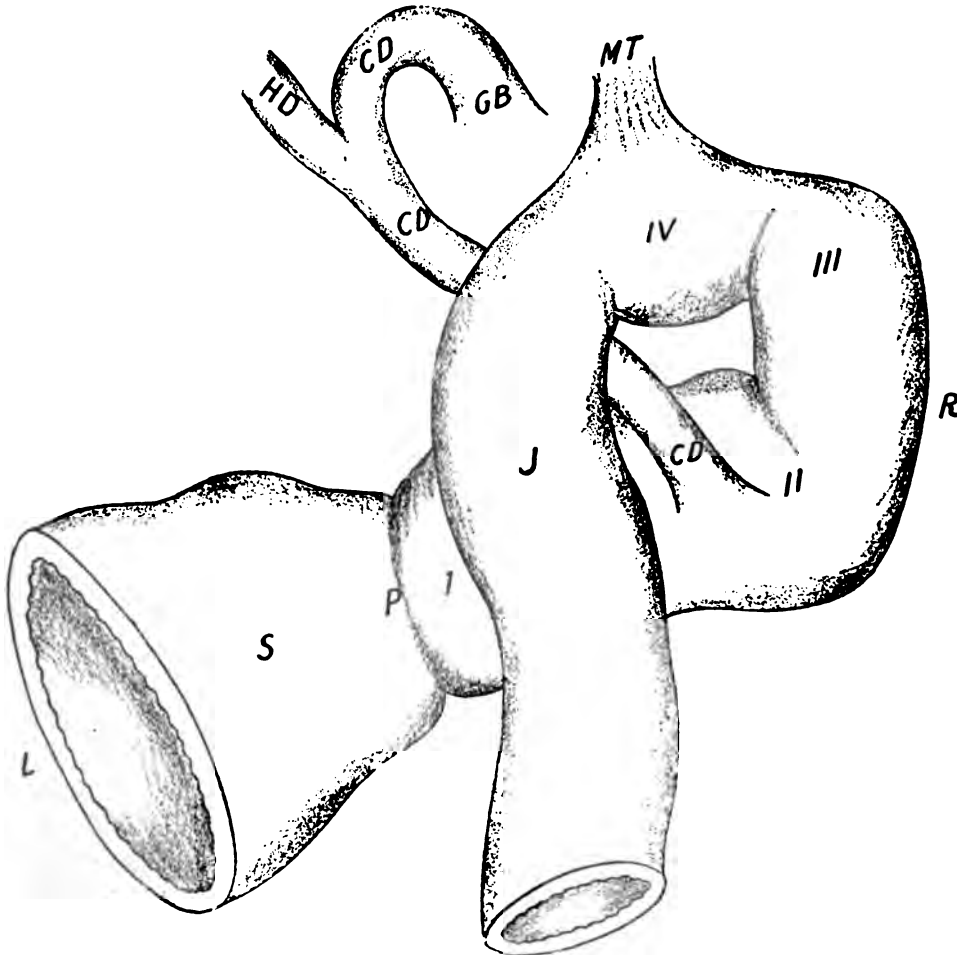


FIG. 2.—Posterior view of position of duodenum. S, stomach; P, pylorus; I, II, III, IV, parts of duodenum. Note that the second and third parts both ascend to the junction with the jejunum which is held up by MT, the muscle of Treitz; GB, gall-bladder; CD, cystic duct; HP, hepatic duct; CD common bile duct.

This was probably produced by tight lacing in youth. The formation of the gall-stones may have been due to this cause, as has been urged by Mr. Arthur Keith, who regards gall-stones as a "corset disease." The first part of the duodenum formed practically the major part of the posterior wall of the gall-bladder, and here a large ragged fistula existed between the two.

The London Hospital records for 8 years show that out of 360 cases of intestinal obstruction, 8 were due to gall-stones—a proportion of one in 45. Gall-stone obstruction occurs in women 5 times more frequently than in men. The average age, according to Sir F. Treves, is 57. Case 1 is therefore remarkable in that the woman was but 37, and Case 3 in that the man was only 42. Large gall-stones usually pass into the first part of the duodenum at a point where it lies against the neck of the gall-bladder by a process of ulceration after these parts have become united by adhesions. Less often the calculus ulcerates into the jejunum or transverse colon. Dr. Horace Jeafferson (*Brit. Med. Jour.*, May 30, 1868) narrates a case in which a large gall-stone was vomited. At the necropsy some time later the gall-bladder was found adherent to the stomach. In several cases gall-stones have been discharged into the urinary bladder, and direct communication has been found between the two bladders. Sir F. Treves says that no stone can cause obstruction in the intestines which has passed safely along the biliary passages. The site of the obstruction is usually the lower ileum and the ileo-cæcal valve. The small intestine becomes narrower from its upper to its lower end; and since small stones are more common than large ones, if they cause obstruction at all, it will be near the neck of this elongated funnel. Hence the higher

in the intestine a gall-stone causes obstruction the larger it is. As a rule, any gall-stone of less than one inch in diameter passes spontaneously. The ileo-cæcal valve is one of the narrowest spots in the alimentary canal, and might be expected to obstruct for a time the passage of a calculus which it eventually permitted to pass. Thus, MacLagan has recorded a case (*Clinical Soc. Transact.*, vol. xxi., 1888, p. 87) in which a woman, after 4 severe attacks of intestinal obstruction, passed spontaneously 4 large gall-stones each one inch in diameter, and at the necropsy only the fringes of the ileo-cæcal valve remained.

Many causes appear to combine to produce the obstruction. The small intestine is adapted to propel fluid contents, and its interior is lined with valvulæ conniventes to delay the flow of chyme. It has not a smooth interior and a powerful muscular wall like the rectum and sigmoid adapted to propel scybalous masses comparable to large gall-stones. The rough surface of the gall-stone is moreover ill-adapted to glide along the intestine, and should it remain there for any length of time, its bulk is further increased by rough intestinal accretions. Spasm of the intestine at and below the stone excited by its rough surface, according to Duplay and Reclus, is responsible for the main part of the obstruction. They state that at many necropsies the stone has been found lying quite loosely in the relaxed intestine. In the writer's cases the gut was so contracted below and dilated above that the stone rested upon a septum-like projection, and could by no reasonable pressure be passed on along the gut. This spasm of the intestine accounts for the success which in former days sometimes attended the administration of morphia and belladonna.

In gall-stone obstruction there is no strangulation of intestine. Hence the gut is not paralyzed throughout, as it is in most other cases of acute intestinal obstruction. This fact explains the anomalous symptoms of gall-stone obstruction. The onset is sudden. The pain and collapse are seldom severe until late in the attack. The constipation is ill-marked, and in many cases flatus and even small motions are passed after the onset of the acute symptoms. In Cases 1 and 2 purgatives and enemata produced a motion. The abdomen as a rule is neither tender nor markedly distended. The prominent symptom is vomiting, which is severe, early, continuous, and profuse. The ejecta are deeply stained with bile, so as to closely simulate fæcal vomiting. In a case of Dr. Pye Smith's, the stone was impacted in the upper jejunum, and the patient vomited $1\frac{1}{4}$ gallons of bilious fluid in 48 hours, and died on the sixth day. The vomiting in Cases 1 and 2 could be divided into 3 stages. In the first it was of sudden onset, severe, and profuse. In the second stage, when the stone had moved from a close proximity to the stomach, it remitted. In the last stage, when the stone became impacted lower down, it returned, and was fæcal as in ordinary acute intestinal obstruction. The calculus was probably felt in Douglas' pouch in Case 1. In another London Hospital case it was felt in the ileo-cæcal region—a rare occurrence, for Treves could find no case in which the calculus was felt before operation.

In the diagnosis a great point is usually made of previous biliary symptoms, but as the large stones capable of causing intestinal obstruction are usually single, and do not, as a rule, pass down the duct, jaundice and true biliary colic are generally absent, and the symptoms are limited to more or less obscure pain in the region of the liver. In Case 2 there was

definite hepatic pain, but no jaundice or colic. In Case 3 the jaundice which heralded the obstruction was caused by the gall-stone found in the common duct. The mortality after operation for gall-stone obstruction is very high, about 50 per cent. But Tillmann states that recent results are much more favourable, and he quotes Korte as having saved 4 out of 5 consecutive cases.

TREATMENT.—So seldom has it been possible to state before operation that intestinal obstruction was due to a gall-stone that it is useless to discuss treatment which presupposes such knowledge. The problem, as in all cases of acute intestinal obstruction, is to ascertain the existence of organic obstruction *at the earliest possible moment*. Then open the abdomen, ascertain the cause, and proceed accordingly. The most certain test of the presence of organic obstruction appears to be the turpentine enema ($\frac{1}{2}$ to 2 ounces of turpentine in 16 ounces of soap and water). If this is returned on 2 consecutive occasions without flatus or fæces, the obstruction is almost certainly organic, but even this sign, as has been pointed out, is of uncertain value in gall-stone intestinal obstruction.

LANCET, Aug. 9, p. 355.

Pancreatic Calculus.

By B. G. A. MOYNIHAN, M.S., LOND., F.R.C.S.

Pancreatic calculi are generally white, greyish-white, or yellowish-white, and rounded, ovoid, or elongated like a date stone. They are found most frequently in the head of the pancreas. They may be branched like coral, the trunk lying in the main duct and the offshoots in the secondary ducts. As many as 300 have been found in one case. They are chiefly composed of phosphorus and

carbon salts. At times the canal of Wirsung is found packed with a coarse mortar, sand, or fine rounded pellets.

So few carefully observed cases have been recorded that accurate portrayal of the symptoms is impossible. In the majority of cases pain, or discomfort is felt in the upper abdomen, generally at or near the middle line, rarely under the left costal margin. The pain frequently comes in sharp colicky attacks, similar to, but less severe than those due to gall-stones. A sense of soreness or stiffness is noticed for a day or two after the attack. When the pain is at its height there may be vomiting, hiccough, rigors, cold sweats, or collapse. After the attack fragments of stone may be found in the motions. Diabetes has often been observed. Hansemann in 72 cases of diabetes associated with pancreatic disturbances, found calculi in 12. Oser in 70 cases of lithiasis found that diabetes occurred 24 times. Probably the diabetes is due to chronic pancreatitis produced by the calculus; but pancreatitis in its turn may lead to deposition of calculus. Fatty stools have been occasionally observed, and in one case Lichtheim saw an abundance of fat-crystals in the fæces. Jaundice from the pressure of the stone upon the common duct is rare. Lanceraux states that in each attack of pancreatic colic temporary diabetes is produced by an inhibition of the pancreatic secretion analogous to the inhibition observed when one ureter is obstructed by a calculus. Glycosuria may be observed at intervals. Probably glycosuria occurs only when advanced interstitial inflammation of the interacinal type is present.

TREATMENT.—The subcutaneous injection of pilocarpine incites the flow of the pancreatic juice. A case is reported from Eichorst's clinic of pancreatic lithiasis in which after

injections of pilocarpine the attacks of colic disappeared and the patient was better than for many months before.

Only one case of pancreatic calculus appears to have been treated by operation. It is published by Mr. Pearce Gould (*Lancet*, Dec. 13, 1898, p. 1631). A man, aged 46, was seen in Feb., 1896. In Sept., 1895, his health failed, and in Nov. he suffered for a few days from severe pain at the umbilicus, chiefly on walking up hill. Jaundice occurred and persisted until he came under observation. The liver was enlarged nearly to the umbilicus, the gall-bladder could be felt distended as a cylindrical swelling in the right lumbar region. The motions were clay-coloured. On Feb. 14 the abdomen was explored. Through a vertical incision to the right of the rectus muscle half-a-pint of fluid was aspirated from the gall-bladder. A lump was felt at the back of the small omentum which proved to be a coral-like stone in the dilated duct of Wirsung. Other smaller calculi were found and removed. The operation did not relieve the obstruction to the flow of bile, and on March 3 there was an attack of agonising pain in the right hypochondrium. Mr. Gould with some difficulty reopened the abdomen and was able to feel a stone in the head of the pancreas close to the duodenum, which he removed by incising the pancreas from the front. He was then able to pass a probe through the duct into the duodenum. Bile was vomited, the stools became coloured, and bile ceased to flow from the incision in the gall-bladder, but vomiting persisted, and death from exhaustion occurred on the twelfth day after the second operation. At the necropsy a little pus was found underneath the gall-bladder and behind the ascending colon. The pancreatic duct was dilated and ulcerated. There was a hydatid cyst of the liver. The calculus was composed of phosphate and car-

bonate of lime. Mr. T. H. Kellock (*ibid*) has recorded the case of a man, aged 56, who was seized with acute abdominal pain which was followed by jaundice. Two weeks later he had a second attack. When admitted to hospital he was extremely jaundiced and the liver reached from the third rib to below the costal margin. On the tenth day he had a rigor which was followed by severe pain in the right hypochondrium, and 3 days later he passed a small concretion. Then the jaundice became much less marked but he became exhausted and gradually sank. At the necropsy the liver was found enlarged and the gall-bladder dilated. Embedded in the head of the pancreas in a dilated portion of the duct was another calculus of the size of a cherry stone.

The writer diagnosed pancreatic calculus and successfully operated in one case, which is Case I in the following article. Another case in which pancreatic calculus was diagnosed has been published in the "REVIEW." See Vol. I., p. 200.

See also "REVIEW," Vol. II., p. 219.

LANCET, Sept. 27, p. 856.

Chronic Pancreatitis.

By B. G. A. MOYNIHAN, M.S., F.R.C.S.

Only recently has the importance and frequency of chronic pancreatitis been recognised. When seen by the surgeon it is always secondary. It depends upon infection extending from the intestinal canal or from the bile-passages, upon the long standing irritation of gall or pancreatic stones, or upon malignant disease of the gland. Other causes are syphilis, tuberculosis, and, possibly, alcoholism. Pre-eminent among all these causes is

cholelithiasis. Associated with, and dependent upon it, may be found every grade of inflammation. In the slightest cases there is a little thickening of the head of the gland; that portion nearest to the duodenum is denser and stiffer than the body or tail. In the severer cases the whole head and part of the body also may be enlarged and extremely hard and solid, feeling like a plaster cast of an enlarged gland. The duodenal end is always more affected than the body. The tail is implicated only in the long-standing and severer cases. During the last 2 years, since his attention was more especially directed to the pancreas in operations in the upper abdomen, the writer has seen several cases of chronic pancreatitis.

CASE I.—A married woman, aged 57, had been losing flesh. There were irregular pigmentation of the skin in patches of the colour of *café au lait*, persisting attacks of epigastric pain, and uneasiness of the type of hepatic colic, though less severe and unattended until lately by jaundice which was always slight, and pain passing through from the front of the abdomen to the middle of the back. The stools were occasionally "frothy" and "greasy." On examination under chloroform some indefinite swelling could be felt above the umbilicus and a little to both sides of the median line, though chiefly to the right. The writer diagnosed chronic pancreatitis, and suggested that a pancreatic calculus in its transit down the canal of Wirsung had been attended by the attacks of epigastric colic, and that as it approached the ampulla an inflammation had been started in the common duct causing the jaundice. He advised operation, for if pancreatitis were found and no cause was discovered, relief could be given by drainage of the gall-bladder; if a pancreatic calculus were found it could be removed.

The abdomen was opened 2 in. to the right of the median line by an incision about 7 in. in length, and the fibres of the rectus were split. The gall-bladder at once presented; it was tense, well-filled, and free from any adhesion; the cystic duct, hepatic ducts, and common ducts were thoroughly examined, the liver being rotated for that purpose. Nothing was found. The head of the pancreas was much enlarged and hard, the body less so. A small lump was felt between the duodenum and the head of the pancreas. It did not feel like a stone and was suspected to be a growth deep in the ampulla of Vater. The duodenum was therefore opened, and the papilla Vateri exposed. It appeared normal. The lump was felt to be only a short distance beneath the mucous membrane. The papilla was therefore laid open and the cut edges were seized with a small French vulsellum and held apart. At the bottom of the ampulla a small object could be seen and the knife touching it could be felt to be impinging upon soft stone. A scoop was passed into the ampulla, pressure was made upon the head of the pancreas close to the duodenum, and the stone was lifted out. It appeared to lie in the termination of the pancreatic duct with its end projecting into the ampulla. The duodenum was stitched up with continuous sutures. The gall-bladder was aspirated and drained, and the wound was closed in the usual way. The tube was removed on the seventh day and the wound then slowly healed. The patient is now in perfect health.

CASE 2. SYPHILITIC PANCREATITIS; GUMMA IN THE HEAD OF THE PANCREAS.—A woman, aged 51, had for 10 years symptoms which were thought to be due to pyloric obstruction—pain, which was intensified by taking food, occasional vomiting, and constantly recurring

attacks of "spasms." During the last year or more the pain in several attacks, had been most intense over the gall-bladder, jaundice had followed, and gall-stones had been found in the motions. During the last few months, the pain had increased and flesh had been lost. There was general tenderness in the upper abdomen to the right of the middle line.

On Oct. 1, 1901, the abdomen was opened by the usual vertical incision over the gall-bladder, and the fibres of the rectus muscle were split. On exposing the gall-bladder and bile-ducts adhesions were found and separated. There were no stones in the bile passages. The head of the pancreas was much enlarged, and a rounded and very dense mass of the size of a billiard ball was felt. The diagnosis appeared to be between malignant disease and chronic pancreatitis. The latter was adopted in consequence of the history. The gall-bladder was aspirated and drained, and the parietal wound was closed. The tube was removed from the gall-bladder on the eleventh day, and the wound healed.

In Nov. masses were noticed in the abdominal wall. About 2 in. to the left of the lower end of the wound was a hard, smooth, ovoid lump of the size of a pigeon's egg. In the lower part of the abdominal wall above the right external abdominal ring, was a similar lump. There were 3 smaller lumps in the abdominal wall and 2 in the chest wall. Under iodide of potassium they all speedily vanished, and health was regained.

Syphilitic disease of the pancreas may assume the form of chronic diffuse interstitial, or a localised gummatous inflammation. No doubt in this case there was a gumma, and its incidence was determined by the traumatism of the constant passing of gall-stones.

Syphilitic pancreatitis is more common in children than in adults and is frequently congenital.

CASE 3. CALCULUS IN THE AMPULLA OF VATER; CHRONIC PANCREATITIS.—A woman, aged 41, had been subject to attacks of pain in the right hypochondrium for 8 or 9 years, which 16 months before admission began to be accompanied by jaundice. On admission she was jaundiced. The colour had been present though varying in tint for 4 months. A stone in the common duct was diagnosed. The abdomen was opened and a stone was found impacted in the ampulla of Vater. The head of the pancreas was as hard as stone. The gland felt like a plaster cast. The duodenum was incised, and the stone was removed. The gall-bladder was drained for 11 days. Recovery followed.

CASE 4. CALCULUS IN THE COMMON DUCT; CHOLEDOCHOTOMY.—A woman, aged 58, was seen in April, 1901. The first attack of biliary colic occurred in 1896. Others followed at almost regular intervals of 3 months until Jan., 1901, when the severest attack of all took place. After it she was confined to bed for 3 months, and suffered from constant, though varying, jaundice. Shivering occurred several times, when the pain was worse and the jaundice deeper.

At the operation adhesions were found around the common duct, gall-bladder, and duodenum. A stone, tightly fixed in the common duct, of the size of a Barcelona nut, was removed by incision. A couple of drachms of pus followed. The head of the pancreas was much enlarged and as hard as stone. The adhesions which surrounded it were unusually tough and strong and were with difficulty separated. Before the separation was effected the enlarged head of the

gland felt like a malignant growth. A large drainage-tube was fixed by one stitch into the common duct and the abdominal wound was closed round the tube. Bile was discharged freely for several weeks. A year later the patient was quite well,

CASE 5. MULTIPLE CALCULI IN THE GALL-BLADDER; ACUTE CHOLANGITIS; CHRONIC PANCREATITIS.—A woman, aged 60, had suffered for many years from "spasms," the pain being chiefly in the right upper quadrant of the abdomen, but radiating thence to the whole body. On July 18, 1902, she had a "feverish attack." The temperature was 101° and there were general muscular pains and frontal headache. There were intense colicky pain in the upper abdomen, epigastric tenderness, retching, and slight vomiting. The pain continued paroxysmally till the 24th. On the 26th there was another attack, the pain starting from the epigastric notch and radiating thence around the lower edge of the thorax on both sides. The colon was distended. There was tenderness under the right costal margin, especially at a point about 2 in. above and external to the umbilicus, under which there was resistance to pressure. She became cold and collapsed. On the 27th the conjunctivæ were tinged with yellow and there was bile in the urine. On the 27th the stools were coloured and 11 small calculi were found in the stools. On the 30th there was another attack and on the following day 3 calculi were found in the stools. The next attack was on Aug. 13 and from this date attacks occurred every 48 hours, but no calculi were found. The attacks usually commenced with a feeling of weight in the epigastrium, flatulence was then complained of, and the pain, commencing in the upper abdomen, spread generally and became severe, causing collapse and coldness of the limbs.

On Aug. 25 the usual incision, splitting the rectus near its outer margin, was made and the gall-bladder area was exposed. There were many adhesions, those about the ducts and the head of the pancreas being extremely dense and with difficulty separated. The gall-bladder and the adjacent portions of the liver were thinly adherent to the abdominal wall, omentum, and stomach. The head of the pancreas, which was buried in adhesions, was slightly enlarged and of almost stony consistence. The gall-bladder was opened and cleared of 81 stones; a drainage tube was inserted, and the wound closed in the usual manner. Recovery followed.

These cases show the various stages in progressive inflammation of the gland. In the earlier stages a thickening of the duodenal end is found and is merely incidental, being merged in a more serious condition, giving rise to no special symptoms and requiring no special treatment other than the removal of the cause upon which it depends. In a more advanced stage the pancreatic inflammation becomes the dominant condition, and in the later stages it may exist alone, long after the irritation which gave rise to it has subsided.

Opie distinguishes two forms of interstitial pancreatitis—*interlobular*, in which the inflammatory process is localised chiefly at the periphery of the lobule; and *interacinar*, in which the process is diffuse, invading the lobules and separating individual acini, and involving the islands of Langerhans. In all the preceding cases the type of inflammation was the interlobular. The distinction is important, for in the interlobular variety the islands of Langerhans are rarely affected and then only in the latest stage, and therefore diabetes is exceptional.

TREATMENT—The cause must be removed. But in all cases drainage of the gall-bladder is

necessary. The writer fixes an indiarubber tube into the gall-bladder or into the common duct by a single cat-gut stitch and allows the tube to remain until released by the absorption of the suture. This generally occurs between the tenth and twelfth days and the wound then speedily closes.

CENTRALBL. F. GYN., April 5, p. 359.
Leucocytosis in the Diagnosis of Pelvic Suppuration.

BY DR. MAX DÜTZMANN.

The reports of the value of leucocytosis in the diagnosis of suppuration depending on appendicitis (see "REVIEW," p. 72) suggested to the writer that the method would prove useful in suppuration connected with the female genital organs. In 40 patients in Prof. Martin's clinic in Greifswald, whose blood was examined, the existence of pus was indicated with the greatest certainty by leucocytosis. The results were checked by subsequent operation. In some the existence of pus appeared improbable and might have been overlooked but for the leucocytosis. Eleven cases are given as examples. In the first 6 there was evident parametritis, but the presence of pus was doubtful. Not only abscesses, but even slight retention from faulty drainage after incision were accompanied by corresponding leucocytosis. Thus a woman was admitted with a large left parametric exudation. The temperature at the first blood-count was 99.3°, (the number of leucocytes per c.mm. 17,000, normally there are 8,000 to 10,000). At the sixth count the temperature was 100°, and the leucocytes were 28,300. An incision per vaginam gave exit to a quantity of pus. At the eleventh count the temperature was 98.6° and the leucocytes had

fallen to 15,000. The previously free discharge, however, ceased and with some retention of pus the leucocytes rose immediately to 19,900. On the re-establishment of free drainage they fell to 14,200 with a slightly sub-normal temperature. There was still some purulent vaginal discharge. In the seventh case a woman was admitted with what appeared to be a uterine fibroid or right tubal pregnancy with hæmatocele. The temperature was 99°, and the leucocytes were 17,800. During disinfection of the skin preparatory to laparotomy a large quantity of pus escaped per rectum. In a few days the leucocytes fell to 8,300. A pyosalpinx had ruptured into the rectum. In the eighth case the history, local condition, and appearance of the patient all pointed to carcinoma of the body of the uterus, which was diagnosed. The temperature was sub-normal, but the leucocytes ranged between 16,400 and 15,600. On curetting the uterus with the object of obtaining fragments of growth for examination, a quantity of foetid pus escaped. There was pyometra, not carcinoma. After a second intra-uterine irrigation and the escape of more pus the leucocytes fell to 6,800, and the patient was discharged in good health. In the ninth case right pyosalpinx was diagnosed. The leucocytes were only 9,600 and at the laparotomy serous hydrosalpinx was found. In the tenth the diagnosis was right tubal abortion or pyosalpinx. There was no leucocytosis and the conditions found at the operation were right tubal abortion and a simple cyst of the right ovary. In the eleventh the diagnosis was abscess of the abdominal walls. There was no leucocytosis and on incision the supposed abscess proved to be a metastatic sarcomatous growth. In the twelfth case there was no leucocytosis and left pyosalpinx was diagnosed. There was a left tubal abortion.

WIEN. KLIN. WOCH., Aug. 7, p. 813.
Multiple Fibromata and Neurofibromata.
 By DR. C. ADRIAN.

An unmarried nullipara, aged 56, entered hospital on April 20, 1902, for the removal of a cervical tumour. Her father died of senile decay at 86, her mother, who was said to have had numerous cutaneous tumours, of the same kind, at 83. Of 6 brothers and sisters none had cutaneous tumours. She was covered with cutaneous tumours which she stated had existed from birth, and had not enlarged. Menstruation began at 18, but occurred only about twice a year until it ceased at 42. At 26 the largest tumour, which was situated over the right scapula, was excised; it was of the size of a child's head and weighed 1½ lb. Since then there had been progressive scoliosis. Three or 4 years before admission a soft, doughy, painless swelling of the skin and soft parts appeared over the inner side of the right arm and elbow, and steadily but slowly enlarged. For 3 years the feet and hands had become cyanosed, though there were no other signs of local asphyxia. In Oct., 1901, 7 months before admission, a swelling was noticed in the right cervical region. This enlarged slowly and painlessly until Christmas, when the increase became rapid. Since Christmas there had also appeared weakness of the right arm which could not be raised or rotated. For a month before admission there had been paroxysmal attacks of pain, which began in the right elbow and radiated to the tips of the fingers with tingling and other paræsthesiæ. There had never been headache, vertigo, dyspnœa, œdema, cardiac palpitation, syncope, or dysphagia. Appetite was good, and the bowels acted regularly.

The woman was undersized, emaciated, cachectic, and though intelligent, had a

cretinoid expression (Fig. 1). The skin was loose and dry. Pulse and respiration were regular. The whole body, except the scalp, palms, and soles was covered with soft fibromatous tumours from the size of a pin's head to that of a pigeon's egg. Some were pedunculated. The vulva was covered with fibromata. The tumours were least numerous on the lower limbs. On the outer surface of the left shoulder, was a pedunculated, soft, lobulated tumour of the size of a large hen's egg, which was covered with a number of smaller growths (Figs. 1 and 2). The visible mucous membranes were pale but free from tumours. From the middle of the inner surface of the right arm to the elbow

extended a soft doughy swelling, which appeared to be composed of several bands of tissue situated in the skin and subcutaneous tissue. The overlying skin was livid but not tender. One cord could be felt, which connected the upper end of the swelling and the brachial plexus. Below Poupart's ligament on either side were small, hard, somewhat fixed spindle-shaped nodules, which appeared to be connected by bands with the femoral nerve. There were similar but smaller nodules on the outer sides of both popliteal spaces. Two nodules were connected with the periosteum of the right tibia. On the anterior fold of the right axilla (which with the left was devoid of hair), the anterior and external



FIG. 1.



FIG. 2.

surfaces of the right arm, and the anterior wall of the thorax, were soft lobulated swellings covered with cyanosed skin, which resembled that on the inner surface of the right arm. Bluish spots were irregularly scattered over the body and on palpation were found to cover small tumours. The neck, face, and waist were brown, and the whole body was covered with freckle-like spots of pigment, and larger coffee-brown stains. There was a small angioma near the umbilicus.

In the right supraclavicular fossa was a tumour which in position, size, and consistency differed from the others. It was firm and in places of cartilaginous hardness, had a slightly nodular surface, and extended from the ear above to beneath the clavicle below. Behind it sent a process beneath the upper margin of the trapezius. The sterno-mastoid was pushed over to the left (Figs. 1 and 2). Behind the tumour were 2 hard movable nodules, possibly glands. The whole tumour was slightly movable over the underlying structures, and was not adherent to the skin, which, over it, was stretched, thinned, and permeated by large veins. Except slightly in the inguinal regions the lymphatic glands were not enlarged. In the right suprascapular fossa was a large cicatrix in the position of the tumour which had been removed 30 years before (Fig. 2). The spine in the cervical region was curved with the convexity to the right anteriorly, and in the lumbar region to the left posteriorly, with considerable restriction of the cervical movements. At rest the chin was supported by the somewhat depressed manubrium sterni. The tongue was intensely cyanosed. There was left optic atrophy. The thyroid gland appeared to be slightly enlarged. The urine was free from albumin and sugar. The right arm hung loosely, and could not be actively

moved at the shoulder joint. The biceps and triceps were also paralysed. The knee-jerks were increased and there was slight ankle-clonus. On April 21, 1902, Prof. Weinlechner excised the large cervical tumour. Partial resection of the clavicle was necessary, and, in freeing the tumour, the right jugular vein was accidentally wounded. Profuse and fatal hæmorrhage resulted.

NECROPSY. — The tumour on the inner surface of the right arm consisted of a number of spindle-shaped bands, which were connected with the brachial plexus, and were held together by a loose fibro-lipomatous tissue. Some bands extended from the arm to the anterior surface of the scapula, and to the large, partly excised tumour in the supraclavicular region. The latter was largely myxomatous, contained no firm bands, and was connected with the cervical plexus and the vertebræ. The right lobe of the thyroid gland was enlarged and contained colloid cysts. In the uterus were small polypi. At the junction of the jejunum and ileum and opposite the mesentery was a hard nodule of the size of a hazel nut which projected slightly under the mucous membrane. In the wall of the duodenum between the peritoneum and mucosa, which was superficially eroded, was a tumour of the size of a walnut. In the gastric wall and mesentery were numerous tough irregularly scattered subserous nodules varying in size from that of a lentil to that of a bean. The œsophagus was normal. There was osteo-arthritis of the right knee and elbow joints, and 2 nodules in the periosteum of the right tibia. The multiple cutaneous tumours were fibromata, the tumours of the right arm, brachial and cervical plexuses were neuromata, composed of interlacing tendril-like bundles, the tumour of the right supraclavicular region was a neuromyxoma, that of the small intestine a

neurofibroma, and that of the duodenum a neurofibroma, which had undergone sarcomatous degeneration. The nodules in the gastric walls and mesentery were miliary fibromata.

This is a typical case of von Recklinghausen's "neurofibromatosis," but is of special interest because of the association of neuro-mata with multiple fibromata mollusca of the skin, and fibromata of the stomach, mesentery, and periosteum. It is somewhat remarkable that though a small tumour of the duodenum had undergone sarcomatous degeneration, the large supraclavicular growth showed no signs of malignancy. Though there was paresis of the arm there was no anæsthesia. No cause was found for the optic atrophy. Scoliosis is a fairly common complication of multiple neurofibromata; the writer has seen 2 such cases and has collected 25 others. The subjects of neurofibromatosis are frequently undersized and badly developed. The osteo-arthritis was doubtless secondary to paralysis of the right arm. Only 1 case comparable to this has been reported. There were fibromata of the skin, nerves, mesentery, and intestine. There were also tumours of the nerve-roots, which compressed the spinal cord, and osteo-arthritis of the joints of the hand, elbows, shoulders, knees, and hips (*American Jour., of the Med. Sciences*, Jan., 1901, p. 1).

See also "REVIEW," Vol. II., pp. 55, 145, and 518.

CLINICAL JOURNAL, Aug. 27, p. 297.
Venous Thrombosis in Heart Disease.
 By W. HALE WHITE, M.D., F.R.C.P.

CASE I.—A woman, aged 24, was admitted to hospital on Sept. 25. She had been suffer-

ing from rheumatic fever for 7 weeks. The temperature was 100·4°. The cardiac impulse was diffuse and heaving, and the cardiac dullness extended a little outside the nipple and slightly to the right of the sternum. There were mitral systolic, presystolic, early diastolic, and double aortic murmurs. Under salicylate she seemed to do well until Nov. 2, when there was a relapse. On Nov. 8 there was a loud pleuro-pericardial rub. On Nov. 11 the cardiac dullness, which had diminished, had again increased, and extended nearly an inch to the right of the sternum and outside the left nipple line. On Nov. 13 a pericardial rub was heard. On Nov. 20 there was systolic retraction of the cardiac apex. On Dec. 1 some œdema was noticed on the left shoulder and upper arm, and to a less degree on the left side of the neck. She was very short of breath and somewhat livid in the face. Oxygen inhalations were used. There were extensive signs of pleurisy on both sides, and signs of fluid at the base of the left lung. The probable presence of thrombosis made the writer suspect that the fluid in the chest might be pus, so an exploring needle was inserted, but only clear sterile fluid was withdrawn. The patient became very weak, and it was necessary to inject strychnine. On Dec. 12 the œdema of the neck and arm was much more marked, especially on the left side, and it extended down to the fingers and also a little over the upper 3 intercostal spaces in the front. The face was cyanosed. From this time the œdema diminished. In a few days both external jugular veins could be felt; they were hard. On Dec. 20 and 23 there were severe attacks of dyspnoea, with lividity, which were relieved by oxygen and venesection. From this time there was continuous but slow improvement.

CASE 2.—A man, aged 26, was seen on April 6. Eight weeks before he had influenza which was followed by pneumonia. On April 5 the head, face, and neck began to be livid. The head, neck, and to a less degree the upper 2 in. of the thorax in front, the arms, and the finger-nails were livid. The rest of the body was of a normal colour. The veins of the chest and neck were well marked. Both external jugulars felt hard. The livid part was somewhat oedematous. The pulse was rapid and weak. The heart appeared a little dilated, the apex being outside the nipple line. The heart-sounds were very feeble. The writer thought he detected a faint systolic murmur. The bases of both lungs were very dull. The patient was so livid that venesection was proposed but it was declined. Three leeches were applied over each side of the neck and the bites were fomented so that there was much bleeding. On April 8 he was much better. The oedema was less, the veins on the thorax were still well marked, and there was a little ring of dilated veins at the lower part of the chest. A loud mitral systolic murmur was heard. There was a well-marked cardiac impulse in the sixth space, half an inch outside the nipple line.

Thrombosis of the systemic veins is very rare in heart disease. It occurs nearly always in the veins of the upper limbs, head, and neck. This is remarkable, for in influenza, typhoid fever, tubercle, and cancer—the other 4 diseases that frequently lead to thrombosis—

the veins of the lower limbs are nearly always effected. Of 22 cases of thrombosis in heart disease recorded by Prof. Welch the patients were females in 17 and males in 5. Thrombosis is much more frequent in mitral than in aortic disease. It occurs in patients between the ages of 15 and 30. It appears during the failure of the heart. Of 24 cases the thrombosis was on the left side in 15 on the right side in 2, and bilateral in 7. In 7 of the 22 cases it was limited to the arm, in one case to the neck, and in 16 it affected both. The prognosis is bad: 22 out of the 24 cases were fatal.

The necropsies showed that the starting-point of the clot was the lower part of some vein, for instance the internal jugular, the innominate veins where they join, or the lower part of the subclavian or external jugular. As a rule the walls of the veins themselves are not diseased. Bacteriological examination has been made only in 3 fatal cases. In 2 it was negative, and in the remaining case *streptococcus pyogenes* was found in the clot. To explain this peculiar localisation Prof. Welch suggests that the thrombosis may be due to a kind of whirling movement of the blood, that the cervical fascia holds the veins open, and that the disposition of the valves, the bulbous end of the internal jugular, the meeting of currents of blood at different angles, the backward flow of blood, because of the regurgitation through the tricuspid, are all factors.

See also "REVIEW," Vol. IV., p. 474.

MEDICINE.

Hysterical Tympanites.—S. Talma (*Berlin Klin. Woch.*, Feb. 3. p. 90) maintains that hysterical tympanites is produced by tonic contraction of the diaphragm combined with relaxation of the other abdominal muscles, if the tympanites is general; and with relaxation of some and contraction of other muscles, if partial and localised. Thus if the recti and the diaphragm are contracted and the other muscles relaxed, the tympanites is bilateral.

A girl, aged 15, well nourished, and of ruddy appearance, who had never menstruated and had no pharyngeal reflex, entered the writer's clinic for marked prominence of the abdominal walls above the umbilicus, which was said to disappear occasionally. Up to 3 years previously she had always been healthy. She then suffered from gastric pain and hæmatemesis for 2 or 3 months. Later there was frequent pain in the back and abdomen with heart-burn.

The gastric functions were performed normally. The liver and spleen were not enlarged. The epigastrium was prominent, and at the level of the umbilicus was a deep horizontal groove, which formed the lower boundary of the swelling. The distension and the depth of the furrow varied from day to day. The healthy appearance of the girl negatived a deeply seated malignant tumour. The outlines of the lungs defined by percussion were normal. On deep inspiration the lower margins sank and the epigastric prominence increased, but afterwards the diaphragm returned to its normal level. Thus it appeared that the epigastric prominence was independent of diaphragmatic contraction, and was consequently not a symptom of hysteria. The girl was watched day and night, but only twice did

any diminution of the swelling occur. Under superficial chloroform anæsthesia, however, the epigastric swelling and the transverse groove disappeared. The latter was due to contraction of the transverse fibres of the transversalis muscle. As consciousness returned the transversalis contraction recurred, and, though percussion did not reveal any descent of the lungs, the swelling increased with abdominal respiration. Thus the diaphragm contracted sufficiently to form a fixed point between which and the contracting transversalis the viscera were compressed with the production of tympanites. Possibly the centre of the diaphragm descended during inspiration more than the sides. Thus partial and general tympanites are obviously closely allied. On another occasion deep chloroform narcosis was required to obliterate the transverse groove. As consciousness returned the epigastric prominence reappeared, and the ninth, tenth, and eleventh intercostal spaces receded—another proof of diaphragmatic contraction. Soon afterwards the diaphragm was seen to descend during several inspirations, without ascending correspondingly during expiration. Consequently the abdominal walls became more prominent at each inspiration. But as the incomplete transversalis contraction disappeared simultaneously, the phantom tumour (local tympanites) gave place to ordinary general hysterical tympanites.

"Spontaneous" Fractures in Syringomyelia.—Louis Rénon and Jean Heitz (*La Presse Médicale*, July 26).—A woman, aged 66, had a spontaneous fracture while under treatment at the Salpêtrière. In 1884, at the age of 49, she

had profuse metrorrhagia which was followed by weakness of the hands. Walking became difficult, and at the end of a year she was compelled to remain lying or seated on a sofa. She had no pain. The fingers became flexed and fixed in the palm of the hands. In 1888 on admission to the Salpêtrière the muscles of the forearms were markedly atrophic, but the atrophy was hidden by the subcutaneous adipose tissue. The fingers were flexed and bound down by tendinous contractions. There were no contractions, nor trophic disturbances of the skin and nails. She could not walk, and could hardly lift her legs into bed. In June, 1901, when she broke her humerus her condition was as follows:

UPPER LIMBS.—Quite useless; muscular atrophy masked by adiposity; tendinous contraction kept both hands closed. Reflexes abolished.

LOWER LIMBS.—Not so powerless as upper limbs. Reflexes feeble; atrophy not very marked. She could not sit without support. She had well-marked kypho-scoliosis which had developed since she came to hospital. The scoliosis was greatest in the upper dorsal region, and its concavity was to the right. For this reason the head was inclined strongly to the right, with a slight rotation to the left, and because of the cervical kyphosis was bent slightly forward.

EYES.—There was slight nystagmus; the pupils were equal; the left reacted feebly to the light. On the right side there was old optic neuritis, which had produced almost total blindness.

Disturbances of sensibility were very marked, and in distinction to the muscular atrophy which was greater on the right side, anæsthesia was most marked on the left. There was anæsthesia all over the left side below the 4th pair of cervical nerves, slightly greater along the external border of the arm than the inner. On the right side anæsthesia was slight and was confined to the area of the external radicle of the 4th cervical nerve. There was

insensibility to heat in exactly the same region. On the posterior aspect of the left leg there was insensibility to heat, but sensibility to cold. There was an anæsthetic band (insensible to touch, heat or cold) extending right round the neck at the level of the 3rd, 4th and 5th pairs of cervical nerves. The nerves of the left arm were insensible to pressure, though they preserved their sensibility on the right side (Fig. 1). There was no disturbance of the sphincters and the general condition was good.

On June 6, 1901, two nurses were propping her up in bed, and while one pushed her up from behind, the other standing at the foot of the bed supported her by the thumbs. During the process the patient heard a crack, but felt no pain, and thought that the sound was caused by a tear in her night-dress. Not till next day, when her clothing was being changed, was a large ecchymosis noticed on her left arm. On examination, 24 hours after the injury, the arm was almost double its normal size, and completely ecchymotic. A firm swelling extended from the shoulder downwards. There was free movement in the middle of the humerus and marked crepitus. On the other hand she could feel the impression of the fingers on the skin, the movements of the arm, but felt no pain, neither while the arm was in repose nor during the examination. She did not feel the great distension of the limb.

A skiagraph showed, in the middle of a dark globular zone corresponding to the effused blood, an oblique fracture situated between the lower and middle thirds of the bone, and directed downwards and forwards. The lower fragment was drawn up several cm., and its point projected against the skin on the outer surface of the arm. The amount of displacement was due to the almost complete atrophy of the triceps and anterior brachial muscles which, in ordinary fractures of the shaft of the humerus in the same situation, keep the fragments in position. After 2 months union had apparently taken place. Close examination, however, showed slight mobility.

Spontaneous fracture in syringomyelia is not common. It is much rarer than the arthropathies, for trophic alterations of the bone are more apt to occur in the epiphysis than in the shaft of the bone, and several of the cases the writers have collected were fractures close to the epiphysis, or fractures near arthropathies. The writers have found records of 13 cases besides their own. Of these, 10 occurred in men, and 3 in women—an inverse proportion to that found in tabes. The time at which a spontaneous fracture occurs in syringomyelia is variable. Sometimes the disease is of long standing, with advanced muscular atrophy, great trophic disturbance, and arthropathies. But more often the fracture is the initial symptom, and occurs some months, or even years, before the diagnosis of syringomyelia is made; or before the fracture occurs there may only be slight weakness of the hands, with some exaggerations of the reflexes and disturbances of sensation. The fracture is almost always in the upper limb; in tabes it is usually in the lower limb. In one case it affected the femur (Oppenheim), in another, both bones of the leg (Guesda). The other fractures were in the upper limb, and occurred in the clavicle, humerus (thrice), in both bones of the forearm, (twice), in the metacarpals (Schultze), and twice in the phalanges. Several of these fractures occurred in one patient. In opposition to tabetic fractures, the multiple fractures were frequently symmetrical, *e.g.*, affecting both humeri (Kofend). The fracture always occurs in a region over which the skin has before shown disturbances of sensibility to heat. Even when the fracture was the first symptom, this disturbance has been found latent.

The habitual localization of sensory disturbances in the upper limbs explains the frequency of fractures in the bones of these limbs. Two exceptions are recorded. Guesda reports a fracture of the right leg, with advanced sensory disturbances in the right arm. Oppenheim reports a fracture of the femur in a patient who

had thermo-anæsthesia in the arm on the same side. In the writers' patient the fracture was on the left side, on which disturbances of sensation were most marked, although the amyotrophy had always predominated in the right side. Charcot, long ago, called attention to the constant coexistence of thermo-analgesia with the arthropathies of syringomyelia.

A radiograph showed marked change in the skeleton of the injured arm. The humerus was very thin and resembled a bone of the forearm. The bones of the forearm looked atrophic, as in infantile paralysis. They were much more wasted than in hemiplegia. They seemed penetrable by the X rays. Their shadow was less opaque than usual, which indicated some loss of mineral salts, and they appeared to be affected by a rarefying osteitis.

Clinically syringomyelic fractures closely resemble tabetic ones. They are rarely quite spontaneous. There is almost always some slight violence, *e.g.*, a moderate muscular contraction. Kofend's patient, a laundress, broke both arms when carrying her washing. Schultze's patient, a baker, broke his arm while kneading bread. The patients of Laehr and Marinesco broke their forearms when digging. In the writers' case the traction on the thumbs had been repeated daily for years without mishap. As a rule the patient hears a crack when the bone breaks, but feels no pain. He may be able to continue his work. Sometimes extraordinary weakness of the limb is the only symptom; but usually some swelling is noticed. As a rule the swelling is greater than in ordinary fractures, and is accompanied by an increase in the peripheral venous circulation, and by an early and extensive ecchymosis. If the muscles are not too atrophic functional activity is not much interfered with. Guesda's patient, with a fracture of both bones of the leg, raised his wounded limb off the bed without supporting it with his hands. Crepitation is usually faint, and is masked by the cedema.

In tabetic fractures suppuration sometimes occurs at the seat of injury, but never in syringomyelia. In syringomyelia union of the fragments usually occurs, and is brought about by an exuberant callus which very slowly becomes calcified. The callus is very irregular, and after consolidation is complete some of it remains and forms exostoses. As a rule the prognosis of fractures in syringomyelia is good, especially in the early stages, but in early, as well as in advanced stages, the fragments may not throw out sufficient callus and a false joint may be formed.

Purpura Fulminans following Scarlet Fever.—Hubert E. J. Biss, M.A., M.D. (*Lancet* Aug. 2, p. 286).—The diagnosis of the exceedingly rare condition described below is not easy. It seems to correspond more closely to Henoch's purpura fulminans than to any other disease. One of the two cases related by him occurred after scarlet fever. Hæmorrhagic scarlet fever is very rare in this country; it is doubtful, indeed, if extensive cutaneous or subcutaneous hæmorrhages ever occur in the early stages and whether the cases related in some works were not instances of hæmorrhagic diphtheria. Hæmorrhages into the skin and subcutaneous tissues are found not infrequently in association with obstinate suppurative lesions after scarlet fever, such as chronic suppurative lymphadenitis, and suppurations in joints and in and about the temporal bone. No such lesion obtained in the following case. The child had a severe attack of scarlet fever, and convalescence appeared to be established. He still had some ulceration of the soft palate, but the other symptoms had either passed off or had much abated, the temperature was settling down, and he was bright and comfortable. At this point numerous cutaneous hæmorrhages, hæmatemesis, bloody stools, and oozing from the gums occurred. Death occurred in 36 hours. At the necropsy the kidneys were found transformed almost entirely into

fat, a little blood-clot being found in the calices. This blood-clot must have been recent, as none was found lower in the urinary tract, even the urine in the bladder being free from blood. The kidneys were very different from those found in any variety of scarlet fever, and the only symptom of nephritis was slight albuminuria for one day. The change appears to have been more of the nature of acute degeneration than of inflammation, the homogeneity of the condition being very different from the sectional infiltrations seen in either the septic or glomerular type of scarlatinal kidney. No renal phenomena were noted by Henoch in the necropsies of his cases. The sudden occurrence of these widespread hæmorrhages suggests an acute toxæmia or blood infection due to the elaboration of some toxic substance or the invasion of some fresh organism.

A boy, aged 3½, was admitted to hospital on May 16, 1902, certified to be suffering from diphtheria and on this supposition was given an injection of antitoxin containing 24,000 units. The trunk and limbs were covered with a coarse, blotchy punctiform erythematous rash; the throat was much reddened and very oedematous; the tonsils were coated with slimy exudation; the nasal mucous membrane was turgid and covered with muco-purulent discharge; the submaxillary lymphatic glands were considerably enlarged; and the tongue was dry and furred. Culture of the tonsillar exudation presented an abundant growth of streptococci. He was very ill till the 21st, when the temperature which had been continuously 103°, fell to 99°, and the symptoms abated. In the evening the temperature rose to 102.4°. Next day an urticarial rash appeared on the trunk, doubtless from the injection of antitoxin. Double otitis media, diarrhœa with green stools, and free general desquamation ensued. On the 25th a macular, purplish-red eruption was noticed about the knees, ankles, and elbows. By the 29th he was much better; the glandular swellings had almost disappeared

and there was no rash or diarrhoea. The otorrhoea, however, remained, and there was a little rhinitis. There was an ulcer of the size of a threepenny-piece at the junction of the soft palate and right anterior pillar of the fauces, though the tonsils were free from exudation and the tissues of the throat were but little swollen. From this time he improved rapidly until June 4th, notwithstanding that the temperature still fluctuated between 101° and 99° . On that day a vast number of pin-point hæmorrhages were seen in the skin of the trunk. Next morning the trunk and limbs were literally covered with them, the upper limbs so densely as to appear almost uniformly purple. There were but few on the face, except on the inner sides of the eyelids where they were about the size of grape-stones. Blood oozed from the gums. The general condition was markedly worse. He twice vomited half a pint of red blood. Towards evening he passed about that quantity of brightish-red blood per rectum and died.

NECROPSY.—Under the visceral pericardium pleuræ and endocardium of the left ventricle were a few punctiform hæmorrhages. Each pleura contained a few drachms of clear, pink fluid and the trachea and bronchi similarly-tinted frothy mucus. In the stomach were many submucous hæmorrhages, and both it and the intestines, which latter were deeply cyanosed, contained chocolate-coloured fluid; crimson viscous blood filled the rectum. Both kidneys were a little enlarged, but their capsules stripped readily. On section the parenchyma was found transformed almost entirely into fat, which stained readily with osmic acid, but not with iodine solution. There was no differentiation into cortex and medulla and a few faint pink streaks alone suggested the direction of the tubules. Several of the calices contained a little blood-clot but none was found in the pelves or ureters. The bladder was distended with clear, yellow urine, which gave no hæmoglobin reaction.

Thrombosis of the Cerebral Sinuses in Influenza.—Dr. Lewis (*Lancet*, July 26, p. 218).—A domestic, aged 18, was admitted to hospital on Jan. 10, complaining of shortness of breath, palpitation, amenorrhoea. She also complained of vomiting which in the past 2 or 3 weeks had become more frequent. On the day prior to admission she had vomited a little blood. She was somewhat pale but presented no symptoms differing from those of ordinary chlorosis. A loud systolic murmur was heard in the pulmonary area and there was a well-marked bruit in the veins of the neck. The urine contained no abnormal constituents. On Jan. 12 she complained of severe frontal headache and pain in the left lumbar region. The temperature rose to 102° and the headache became more and more severe. Her face was dull and expressionless, she was slow in answering questions, and she gazed about her with a vacant stare. At one time she was very restless, trying to get out of bed, whilst at another she lay very quiet and helpless. Occasionally she cried out. She vomited twice and gradually passed into a state of unconsciousness, and passed fæces and urine in bed. The pupils were widely dilated and the urine contained much albumin. After 36 hours she began to grow restless, and to show signs of returning consciousness. On the 17th she was able to answer simple questions. She said that she was free from pain in her forehead. She drank milk readily but still passed fæces and urine in bed. There were double optic neuritis and a small hæmorrhage below the left optic disc. By the 25th the cerebral symptoms had disappeared and the albuminuria had greatly diminished, there being only a faint trace, but the optic neuritis had slightly increased, especially in the right eye. Next day she complained of great pain in the right thigh and leg, which was accompanied by much swelling, presenting a typical example of a thrombosis of

the right femoral vein. The temperature, which had been normal for 10 days rose to 101.6° The pain and swelling in the leg lasted for a few days and then gradually subsided. On Feb. 11 all the symptoms of the thrombosis in the femoral vein had disappeared, there was no albumin in the urine, and the optic neuritis had slightly diminished. A fortnight later the optic neuritis had disappeared in the left eye, there was still some absence of definition of the margin of the right disc but no distinct exudation and no hæmorrhage into the retina. Recovery was uninterrupted.

Prognosis of Pleurisy with Serous Effusion.—Richard C. Cabot, M.D., (*American Medicine*, June 7, p. 951) has studied the sequels of 152 cases of pleurisy in which there was good evidence of serous effusion but no evidence of tuberculosis, either in the lung or other organs. Cases in which the signs pointed only to dry pleurisy or to chronic pleural thickening, those in which the effusion was known to be purulent, and those in which there was evidence of tuberculosis were excluded.

CONCLUSIONS: (1) Eighty per cent. of the patients with uncomplicated serous pleurisy, who have been followed for 5 years or more are in good health. (More than half of these have been followed for 10 years or more.) (2) Ninety per cent. were apparently in good health at the end of from 2 to 5 years—that is, the pleurisy had no immediate connection with any other affection. (3) Fifteen per cent. sooner or later developed demonstrable tuberculosis of lung or bone. But in only 3 per cent. did this tuberculosis manifest itself within 2 years of the pleural effusion. (4) The type of tuberculosis which occurred was usually mild and of slow course. In one-half of the 23 patients who developed obvious tuberculosis death did not occur until 5 years or more after the pleurisy. (5) A very rapid form of

tuberculosis may develop many years after the pleurisy—9 years and 16 years respectively in 2 cases. (6) Among those who have remained in perfect health 5 years or more only 25 per cent. had any family or personal history of tuberculosis, while of those who have become tuberculous two-thirds had tuberculosis in their immediate family, or in their own past history. The history, therefore, is of great importance in the prognosis. (7) Recurrence of the pleurisy after recovery from the original attack occurred in only 3 per cent. Reaccumulation of the fluid immediately after tapping was rare.

No attempt was made to discover what percentage of the whole group was due to tuberculosis. The writer's figures tend to prove that whether pleurisy is tuberculous or not, the prognosis is good, provided there is no family history of tuberculosis. If pleurisy is tuberculous it is a mild form of tuberculosis and one from which, under proper treatment, complete recovery usually takes place. Even if the lungs are attacked later the type of the disease is unusually mild.

Amaurotic Family Idiocy.—Dr. A. Hymanson (*New York Med. Jour.*, July 12, p. 60).—A male infant whose parents were Russian Jews appeared normal until the eighth month, when he ceased to take interest in his surroundings. He would not raise the head and made purposeless movements of the limbs. The head was large, measuring 19 in. in circumference. The fontanelles were prominent and widely open, but at the age of 10 months they were gradually closing. At the age of 15 months he could not hold his head up; it was usually thrown backwards. He was very anæmic, his muscles daily became weaker and more flabby, and spontaneous movements gradually ceased. He had a vacant look and seemed to see light but did not recognise his parents. He seemed to be deaf but was frightened by a knock at the door. During sleep the eyes and mouth were wide open. The pupils

were slightly contracted and did not react to light. The fundi showed changes similar to those described by Mr. Waren Tay. Corresponding to the macula lutea of each eye was a large bluish-white spot about twice the size of the optic disc. At its centre was a brownish-red circular dot. The optic discs were in a state of grey atrophy and the calibre of the vessels was markedly reduced. The child died at the age of 19 months. Two weeks before death there was great anorexia. He was much emaciated, could hardly move his limbs, and had gluteal bed-sores. The temperature was subnormal, 97.5° to 98°. A necropsy was refused.

Amaurotic family idiocy is a rare condition which has been observed in Jewish children. It was first described in 1871 by Mr. Waren Tay; since then about 68 cases have been recorded. Of these 40 are known to have been fatal; in the others the result is unknown. The family predisposition is shown by the fact that 28 cases occurred in 18 families. 30 cases were observed in America, 11 in England, 14 in Germany, and the remainder in other countries. The etiology and pathology are unknown. The necropsies have not shown any changes in the form or structure of the cerebral convolutions. The clinical characteristics are idiocy, weakness of all the muscles terminating in paralysis, gradual loss of vision, changes in the macula lutea, marasmus, and death at the end of the second year.

See also "REVIEW," Vol. II., p. 55.

Inflammation of a Frontal Sinus in Measles.—M. Joseph Belin (*Bulletins de la Soc. Méd. des Hôpitaux*, May 30, p. 505).—A youth, aged 18, had measles. The eruption appeared on Nov. 12. The coryza was well-marked. The eyelids, especially the left ones, were very congested and œdematous. The evening temperature was 104°. Next day the temperature fell to 100°. The œdema of the

eyelids was very marked on the left side, and it extended to the forehead. In the position of the left frontal sinus there were swelling, redness, and tenderness. Inflammation of the sinus was diagnosed. On Nov. 14 the œdema was increased, and the left cheek was involved. In the evening the œdema was further increased, and appeared to involve the tissues covering the right frontal sinus. On Nov. 15 the redness and swelling no longer involved the right side, but the pain was very intense over the left frontal sinus. An operation was proposed, but epistaxis suddenly occurred from the left nostril, and was soon followed by discharge of foetid pus. Immediately the swelling of the forehead and left lids diminished. The discharge continued for 5 or 6 days. The swelling persisted only in the left upper lid, in the outer part of which an abscess formed. The nasal discharge contained several kinds of microbes—streptococci and staphylococci in great number, some pneumococci, and a few micrococci tetrageni. The pus of the abscess contained streptococci and staphylococci aurei.

Rupture of Abdominal Wall in Ascites.

—A. M. Cudmore, M.B., F.R.C.S., (*Australian Med. Gaz.*, May) was called to a man, aged 55, in bed, with his clothes and bedding saturated. He stated that his abdomen, which had been enlarging for several years, had burst, and that fluid had been escaping for about 3 hours. At the lower part of an umbilical hernia was a small opening admitting a probe, and out of this ran ascitic fluid. The surrounding tissues were discoloured, and the hole was no doubt caused by the sloughing of the skin of the umbilicus. The abdomen was quite flaccid, and contained but little fluid. The liver was felt about 3 in. below the costal margin. The spleen was enlarged. The external genitals and legs were very œdematous. There were mitral incompetence, bronchitis, and fluid at both bases posteriorly. The pulse was intermittent. The umbilica

hernia was easily reduced and kept in position by a pad and strapping, which also prevented the escape of ascitic fluid. The patient improved for about a week, being much relieved by the lessened abdominal pressure, and the œdema of the external genitals and legs decreased. He refused to keep his bed, and was up and about until 18 days after the rupture, when he died from bronchitis and cardiac failure. There were signs of peritonitis.

Spontaneous rupture of the abdominal wall in ascites must be rare, and by most writers is not mentioned. Fagge (vol. i., p. 298, 1886) says that Sir W. Jenner has recorded a case in which (no doubt from the presence of air as well as fluid) the rupture was heard at a distance from the patient's bed. In the "MEDICAL REVIEW" of 1901 a case is recorded (p. 732), but paracentesis had been performed 25 times, whereas in the present case the patient previously refused treatment of any kind. Death is the usual result of rupture, and occurs early from peritonitis. The site of the rupture is usually at a spot where the skin is thinnest, and as rupture is, as a rule, preceded by an umbilical hernia, the abdominal cicatrix must become very attenuated.

Acute Gout of the Pharynx.—M. Lermoyez et M. Gasne (*Bulletins de la Soc. Méd. des Hopitaux*, March 21, p. 283).—Although all laryngologists do not recognise the term "gouty pharyngitis," the following case shows that the pharynx may be the seat of acute gout.

A man, aged 48, who gave no history of gout, and was of regular habits, had travelled extensively in South America, Central Africa, Persia, and the Indies. At 13 he had acute rheumatism and during his travels he had attacks of yellow fever, beri-beri, and dysentery. The alimentary system was extremely sensitive and he was distinctly neurasthenic. For some weeks he had been rather irritable and nervous. After a short journey, completed without either chill or fatigue, the throat became intensely

painful. Next day the left tonsil was much swollen and the uvula and pharyngeal wall were hyperæmic. In consequence of acute pain deglutition was almost impossible. The pulse was 120, the temperature was 101·8°, and the skin was covered with sweat. The patient did not dare to move in the bed nor raise his limbs. Next day no solid food could be taken and severe pain accompanied the passage of even a few drops of liquid. The throat was red but there was no false membrane or adenitis. A saline purgative gave considerable relief but the pains quickly recurred. On the fifth day the voice became nasal, the posterior half of the tongue was tumefied, the left tonsil was very large, and there was reflux of fluids through the nose. Feeding was impossible. The swelling did not give any feeling of resistance to the finger nor any signs of fluctuation. However, from the intensity of the pain, the unilateral swelling, and the surrounding hyperæmia, peritonsillar abscess was diagnosed. Incision was declined. Suddenly on the seventh day the pain ceased, and next morning the patient could speak and eat easily. There was neither expectoration of pus or blood. All swelling had disappeared and only a slight redness remained over the left tonsil. That night a typical attack of acute gout of the right metatarsophalangeal joint occurred. It was accompanied by the usual swelling and redness. The administration of colchicum and salicylate of soda relieved the pain, and 5 days later the patient could walk. Since then there have been many articular attacks but the throat has not been affected.

Pyrexial Crises in Locomotor Ataxy.—Bruno Oppler (*Berlin. Klin. Woch.*, April 14, p. 334).—A man, aged 41, who had indulged to excess in alcohol and tobacco, but had never had syphilis, was seen by the writer in May, 1897. Ten years before "rheumatic" pains in the legs, and 8 years before intermittent attacks

of dyspepsia began. In 1890 he had the first definite gastric crisis, which consisted in abdominal pain and distention, an intolerable feeling of oppression, constant vomiting, and unquenchable thirst. The pulse was accelerated, but the temperature was normal. Between 1890 and 1897 he had 5 or 6 such attacks. The reflexes were normal. During an attack there was hyperchlorhydria. After May, 1897, the attacks recurred about every 6 or 8 weeks. During 1898 the patellar and pupillary reflexes disappeared, lightning pains became frequent, there were patches of cutaneous anæsthesia, and ataxy of the lower limbs appeared. Romberg's phenomenon was present. The diagnosis, previously uncertain, was assured. On Feb. 2, 1899, there was a crisis with altogether different symptoms. There was no vomiting. A sense of oppression and severe lightning pains in the lower limbs were present, but were completely overshadowed by a violent rigor with intense general prostration. The axillary temperature rose to 104.8. The spleen was not enlarged and there was no herpes labialis. During the following day there was profuse perspiration and the temperature fell to normal. On Feb. 23 there was an exactly similar attack, and this was followed by attacks on May 14, June 12, June 18, Aug. 18, Sept. 20, and Oct. 20, which were cut short by 15 gr. of phenacetin taken shortly after they began. Only one other case of pyrexial crises in locomotor ataxy has been recorded—by Pel; in it there was herpes labialis.

Paralysis of the Ocular Fibres of the Sympathetic Nerve in Pulmonary Tuberculosis.—M. A. Souques (*Bulletin de la Soc. Méd. des Hôpitaux*, May 23, p. 486).—A man, the subject of chronic pulmonary tuberculosis, presented symptoms of paralysis of the left cervical sympathetic nerve—myosis, narrowing of the palpebral fissure, and retraction of the eye. Nothing in his history or condition pointed to any of the usual causes of this paralysis—affections of

nerve roots, pachymeningitis, myelitis, or bulbar lesions. The writer was wondering whether there was any relation between the paralysis of the sympathetic nerve and the tuberculosis when he found the same symptoms in 2 other cases of pulmonary tuberculosis.

The pupil-dilating fibres of the sympathetic pass out from the spinal cord principally, if not entirely, by the ramus communicans of the first dorsal nerve, to the first thoracic ganglion of the sympathetic, thence they pass by the inferior cervical ganglion to the cervical sympathetic trunk. The first thoracic and inferior cervical ganglia are so near one another that they are often confounded as one under the name of the ganglion of Neubauer. This ganglion is very close to the apex of the lung. Hence inflammation of the latter may give rise to pleuritic thickening and adhesions which may involve and paralyse the pupil-dilating fibres of the cervical sympathetic either in the rami communicantes or in the ganglion. In the absence of necropsies the exact position of the lesion cannot be stated.

Reduplicated Cardiac Impulse and Sounds.—John McClymont, M.D., (*Lancet*, March 8, p. 664).—A gardener, aged 33, with no previous special history, consulted a medical man for coryza. The cardiac rhythm and sounds presented such unusual features that it was concluded that the heart was diseased. When the man's employer heard of this he was discharged. He became a coalman and did the laborious work with such impunity that he resolved to have his heart re-examined, with the prospect of returning to his former occupation.

He was in perfect health and had no cardiac symptoms. There was a double cardiac impulse in the normal position, the second being the feebler and immediately following the first. The sounds were also reduplicated. There was no increase of præcordial dulness. The first sound in the aortic area was slightly impure. There was no reduplica-

tion of the pulse. The complete absence of any cardiac symptoms, the lack of either hypertrophy or dilatation of the heart, and the unfailing regularity of the second impulse did not suggest the missed beat of a failing organ. Radioscopy showed the first systole dilating the great blood-vessels and causing the pulse wave and first strong cardiac impulse. The apex remaining all the time in systole, there then occurred a second contraction of muscular fibres, principally or alone at the base of the ventricles. The great blood-vessels were not dilated by this contraction but it doubtless gave rise to the second cardiac impulse and to the fainter, echo-like heart sounds. This peculiar condition was no doubt due to some irregular innervation.

Sore Throat Caused by Friedländer's Bacillus.—C Nicolle and A. Hebert (*Presse Médicale*, May, p. 521).—A girl, aged 12, usually healthy, complained of a slight pricking sensation in the throat. A whitish spot, of diphtheritic appearance, was seen on the right tonsil. Next morning there was on the tonsil whitish false membrane, 6 or 7 mm. long and 4 or 5 broad. It was firmly adherent to the subjacent tissues, which bled when an attempt was made to remove it. There were no general symptoms, fever, or eruption, and the pulse and appetite were normal.

The writers have observed similar symptoms in other cases of sore throat due to the bacillus of Friedländer, so they excluded the idea of diphtheria, and diagnosed an angina due to the pneumo-bacillus. Direct examination of the membranes, and cultural tests on coagulated serum confirmed the diagnosis. The false membrane persisted in the child's throat for some weeks, but it did not increase or cause any other morbid symptom. At the end of that time it disappeared completely.

The bacillus of Friedländer does not seem to be, even as a saprophyte, a frequent inhabitant of

the throat. Netter found it only in 9 out of 105 cases of membranous sore throats. The writers have examined 3,670 cases, and have found it in only 24. In 11 cases it seemed to play the chief part; in the other cases it was probably a saprophyte.

Sudden Death in Apical Pneumonia.—Charles Leroux (*Archives de Méd. des Enfants*, April, p. 221).—A girl, aged 5, who was previously in good health, was suddenly attacked with feverishness, vomiting, and inflammation of the left tonsil. The case appeared to progress favourably till the fifth day, when vomiting and severe gastric pain were incessant. The evening temperature was 103° and the pulse was 120. The patient was restless and rather delirious. There was no cough. Epigastric tenderness was so marked that the patient would not bear palpation. Next day the temperature was 104° and the pulse 140 and bounding. In the evening the symptoms were more marked, the respirations were 52, and there was slight impairment of resonance in the upper half of the right lung posteriorly. The breath sounds were a little harsh and vocal resonance a little increased. The signs increased slightly at the right apex, enabling pneumonia to be diagnosed. The pulse reached 160, and the temperature 106°. There was considerable restlessness. On the night of the third day the child became suddenly pale, sank down in bed, and died.

Such a termination to pneumonia in children is uncommon, especially so early in the disease. Notwithstanding the high pyrexia the pulse did not indicate marked cardiac failure. Certain forms of pneumonia in children end fatally in 24 to 36 hours, but they are generally characterised by cerebral or typhoid symptoms rather than cardiac failure.

THERAPEUTICS.

Lavage of the Colon.—M. Froussard (*La Presse Méd.*, July 16, p. 675).—Lavage of the colon is now so frequently employed that a description of the method should be useful.

INSTRUMENTS.—For adults. A vessel capable of containing $3\frac{1}{2}$ pints of water, connected with an india-rubber tube measuring from $1\frac{1}{2}$ to 2 yards, and fitted with a stop-cock. A rectal cannula of red rubber measuring from 10 to 14 inches. For children, a Nélaton's urethral catheter varying in size according to age.

TECHNIC.—Pressure is increased or diminished by raising or lowering the vessel containing fluid. When raised to $11\frac{1}{4}$ in. the pressure is about 2 oz. on each square in. of intestine. This pressure is more than sufficient in the majority of cases.

TEMPERATURE.—Varies according to the case. Usually from 50° to 60° F. (cold) or 86° to 104° F. (hot), or above 104° F. (very hot). The latter temperatures increase the contractility of the muscular fibres, while cold injections have an opposite effect.

QUANTITY OF LIQUID INJECTED.—Varies with age and the intestinal condition. In children the quantity varies from 7 oz. to $1\frac{3}{4}$ pints. In adults $3\frac{1}{2}$ pints, but sometimes this amount causes pain, so that no fixed rule can be laid down.

NATURE OF LIQUID INJECTED.—(a) Water previously boiled. (b) Liquid containing some drug which may be purgative, astringent, emollient, carminative, alterative, or antiseptic. Natural mineral waters are frequently given.

POSITION OF THE PATIENT.—On the back, but turned a little on to the right side, with a cushion under the shoulders. In this position the cæcum is low, which insures the fluid reaching it, while gas tends to enter the descending colon and rectum.

TECHNIC.—(1) Introduction of the cannula. A little vaseline should be applied to the anus, and the cannula also oiled and held between the thumb and first two fingers like a pencil. It is pushed first upwards and then forward in a direct line from the anus to the umbilicus. The cannula may be slightly rotated, and must be introduced slowly. (2) Fixation of tube to cannula. (3) Opening of the cock, which should be near the operator's hand so that the flow may be stopped at any time. It should enter very slowly, or it will be rapidly expelled.

DIFFICULTIES.—Introduction of the cannula may be impossible owing to spasm of the rectum or mechanical obstruction. The difficulty may be due to congested hæmorrhoids, anal fissure, or to irritability of the mucous membrane. In these cases cocaine may permit of introduction of the cannula. There may be tumours in the true pelvis, or displacement or hypertrophy of an organ, causing the rectum to be pressed against the sacrum. In these cases the cannula impinges against the obstruction, and either bends on itself or cannot be pushed on. Gentle pressure combined with rotatory movement may be tried. If the uterus be retroverted or retroflexed it may be replaced by a finger introduced into the vagina. If the obstruction be due to fæces an ordinary enema or a purgative may be given on the preceding night. If there is rectal spasm gentle, slow, continuous pressure exercised by the catheter may overcome it, or a small quantity of liquid at low pressure may be used. When the cannula has reached the colon the water may not flow evenly. This is frequently caused by the end of the cannula being blocked by mucus or by fæcal matter. Drawing back the cannula is often sufficient, but it is sometimes necessary to increase the pressure by raising the vessel containing the fluid, but this should be continued only for a short time.

Sometimes arrest in the flow of the liquid is accompanied by a more or less severe spasm of pain, but it usually ceases if the cock is closed for some minutes. Intestinal lavage is usually painless, or accompanied only by temporary colicky pain. In some patients it produces severe enteralgia with cold sweats, pallor, and occasionally syncope. The enteralgia may last several days, when it is better to stop the treatment or to modify the technic by altering the pressure or the temperature. More or less severe hæmorrhage may follow lavage; this does not result from hæmorrhoids and seems caused chiefly by too high pressure and temperature of water. The temperature of the patient may rise and there may be symptoms of gastro-enteritis. This is due to auto-intoxication by absorption of the toxins contained in the fæcal matter, the softening of which favours this result. Hence the advice given above to empty the bowel thoroughly before lavage. Perforation rarely takes place, and only when pressure is great and there is ulceration of the intestine.

Treatment of Relapsing Pleural Effusions by Gaseous Injections.—M. Vaquez and M. Quiserne (*Bulletins de la Soc. Méd. des Hôpitaux*, May 23, p. 428). The writers' method is derived from that of the late Prof. Potain. They produce an artificial pneumothorax which checks the incessant reproduction of fluid observed in certain cases of chronic pleurisy. The mode of action is purely mechanical. The choice of the gas used depends on its greater or less absorbability rather than on any antiseptic property.

The injection of gas into the pleura is performed with a trocar connected with a Y-shaped indiarubber tube. One branch of the tube is connected with a Potain's syphon, the other is free and is provided with an ampulla of glass filled with sterilised cotton-wool. Before use the tubes are carefully boiled. The free

branch of the Y is clamped with an artery forceps while the paracentesis thoracis is performed. Then the forceps is transferred to the other branch of the Y and an air pump is connected with the free arm. Air is injected slowly into the pleural cavity and is sterilised in passing through the cotton-wool. If it is desired to inject any other gas that can be easily done from a bag filled with it. The quantity of gas to be injected depends on the amount of fluid withdrawn; in most cases half a litre is sufficient. The capacity of the pump being known the number of strokes of the piston shows the quantity injected. Air appears to answer well in the majority of cases. As shown in Case 1 it is slowly absorbed. But if the effusion is rapidly reproduced nitrogen, which is very slowly absorbed, may be used. After air is injected into a serous cavity only carbonic acid and nitrogen remain. The impermeability of the pleura to nitrogen is shown by a case of relapsing staphylococcic pleurisy recorded by Widal. After the injection of air the pneumothorax lasted only 10 days; after the injection of nitrogen, 25 days. Perhaps the injection of air into the pleural cavity may prevent by its mechanical action certain untoward complications of paracentesis thoracis, such as rapid extension of tuberculosis in the compressed lung after it is released from pressure.

CASE 1.—A man had been 8 months under treatment for left tuberculous pleurisy. Paracentesis had been performed 12 times, 1000 to 1500 gm. of fluid being removed on each occasion and the effusion being reproduced in from 3 to 5 weeks. The general condition of the patient was good; he had no fever and took food well. He could go about except during the 8 or 10 days preceding paracentesis, when increasing dyspnoea kept him in bed. On Jan. 7 a litre of serous fluid was removed. On the 21st the effusion was reproduced and a litre of fluid was again removed, and with the apparatus devised by Professor Potain about $\frac{3}{4}$ of a litre of air were injected. The pleura was evidently very thick

and hard, for it offered great resistance to the passage of the trocar. An hour later the temperature was elevated to 104° and the patient felt ill, but in the evening the temperature returned to normal. Immediately after the injection all the signs of hydro-pneumothorax were present. Pneumothorax persisted until April 28—more than 3 months. Only a small quantity of fluid at the base of the lung could be demonstrated. Further intervention does not seem to be necessary.

CASE 2. — A man had tuberculous pleurisy which began in Oct., 1901. In March, 1902, paracentesis had been performed 5 times. On March 27 paracentesis was performed and $\frac{1}{2}$ of a litre of sterilised air were injected. No reaction followed. Signs of pneumothorax lasted for 2 weeks. At the end of April the patient left the hospital greatly improved.

Camphor in the Treatment of the Morphine Habit.—Julius Hofmann (*Therap. ut. Monatshefte*, July, p. 331) has shown that camphor normally raises the blood pressure and causes the heart to contract, while morphine lowers the blood pressure and causes the heart to dilate. In the morphine habit as the effect of the drug passes off there is a reaction. The previously paralysed vasomotor nerves act with redoubled energy, the arterioles contract, and the blood pressure rises with secondary dilatation of the heart. At this stage all the symptoms of abstinence from morphine are most troublesome and usually persist until another dose is taken. Camphor is the most powerful stimulant known. If given as soon as the symptoms caused by the withdrawal of morphine appear the patient's condition is rendered much more tolerable. Cardiac failure is prevented, and the spasm of the blood vessels is removed. That camphor acts thus on the peripheral circulation is proved by the following case. A man developed alarming toxic symptoms after drinking 20 cups of coffee. There was acute cardiac dilatation secondary to spasm

of the arterioles. A hypodermic injection of camphor relieved the condition after morphine had failed. Camphor does not remove the purely nervous disturbances, the motor restlessness, and the cramp in the legs, but the mental condition is greatly improved, probably owing to a better cerebral circulation, and hypnotics such as trional or paraldehyde act well, though before the administration of camphor they were useless. The writer gradually reduces the quantity of morphine and does not begin with the camphor until the symptoms of abstinence appear. He gives it by the mouth in doses of 0.05 gm. (about $\frac{1}{4}$ gr.) morning and evening or thrice daily according to circumstances. Fifteen to 30 gr. of trional may be given for insomnia. Useful adjuncts to the camphor treatment are "validol" (*"Review,"* Vol. II., p. 684) in doses of 15 drops 3 times a day, and daily electric baths.

The Infiltration Treatment of Rheumatic Neuralgia and Myalgia.—R. Bloch (*Therap. ut. Monatshefte*, July, p. 346) has, for the past 3 years, employed Schleich's infiltration anaesthesia with a solution of tropacocaine in certain rheumatic affections, such as lumbago, trigeminal, occipital, or intercostal neuralgia, and sciatica, with such success that he claims the method to be a specific. If the pain is due to chill, that is, if it is truly "rheumatic," it is so certainly and permanently cured by infiltration of the affected area, that failure indicates another origin. Thus the writer diagnosed correctly a case of caries of the lumbar spine, at a time when the only symptom was left sciatica, which was not amenable to infiltration. In non-rheumatic cases the pain may be alleviated until the direct effect of the infiltration has passed, and anaesthesia may be produced sufficient for the application of the actual cautery along the course of the nerve; in acute and sub-acute rheumatic cases the pain is permanently banished. The infiltration of the skin must be thoroughly performed; simple

subcutaneous injections are useless. Many cases of injury and gonorrhœal rheumatism are also cured by infiltration; they should, therefore, be excluded before a diagnosis of acute or subacute rheumatism is based on the results of treatment.

Ozone in Whooping-Cough.—Louis Delhern (*Archives des Médecine des Enfants*, May, p. 257) recommends this method as the result of considerable experience. Ozone has an antispasmodic influence in whooping-cough. It does not seem to have any effect in the initial catarrhal period or in cases that have almost run their course. Its influence is manifest during the attacks of spasmodic cough. It should be inhaled for 10 minutes 3 or 4 times daily. The attacks of coughing rapidly diminish in number and severity. In from 10 to 12 days they disappear or only occur twice or thrice in the 24 hours. Ozone has also a marked action upon the digestive phenomena such as cyanosis. In cases of whooping-cough complicated by broncho-pneumonia ozone does not seem to have so much effect as in other cases. The duration of the periods of spasmodic cough is frequently shortened, but the most remarkable effect is the great diminution in intensity and violence of the attacks. The treatment ought to be continued for a fortnight. In every case in which it was relinquished too soon the patient relapsed and the spasmodic attacks increased in intensity. Ozone seems to have no toxic effects—an advantage over other methods.

The Action of Adrenalin.—M. Bukofzer (*Allgem. Medicin. Centrat Zeitung*, May, p. 515).—The application of a piece of wool soaked in adrenalin to an inflamed mucous membrane produces marked pallor in a few seconds. A drop of the solution, diluted 6 or 8 times with

water, causes anæmia of the conjunctiva. The writer thinks that adrenalin causes only the capillaries to contract, and leaves the veins and arteries unaffected. External applications have no effect on chronic hyperæmia of mucous membranes. Adrenalin has a powerful action on the laryngeal mucous membrane.

In so far as it arrests capillary hæmorrhage adrenalin is useful in operative surgery, but it does not prevent bleeding from the larger vessels. Its action upon the mucous membrane produces a widening of the nasal cavities, and it is therefore useful in examinations. It may be used for the removal of the hoarseness due to hyperæmia, from which singers often suffer. It has, besides, a slight anæsthetic effect, and the writer has never observed toxic results from its use.

The Elimination of Aspirine.—Dr. E. Filippi and G. Nesti (*Allgem. Medicin. Centrat Zeitung*, June, p. 613).—Aspirine was given to animals and the salicylic reaction was sought for at regular intervals by means of chloride of iron, both in the synovial fluid, which was previously slightly acidulated, and in the urine. In the frog the reaction could be obtained at the head of the femur. Re-absorption of the aspirine followed more slowly than that of salicylate of soda. In dogs the salicylic reaction was present an hour after the administration of 3 gm. of aspirine and in the urine traces could be found 77 hours after administration while all signs of it were absent 28 hours after salicylate of soda had been given. The more prolonged action of aspirine corresponds with its longer presence in the body. The salicylic reaction was stronger in the synovial fluid than in the urine, and lasted for 54 hours.

The synovial membranes of the joints have a specific attraction for salicylic acid, which favours the cure of articular rheumatism. In 5 cases of acute rheumatism the knee joints were punctured 2 hours after 4 doses of 0.5

gm. aspirine had been taken. The synovial fluid gave a much stronger salicylic reaction than the urine which was passed at the same time. On the other hand in a case of gonorrhœal arthritis of the knee with similar doses the reaction was feeble. In 2 out of 3 cases of pleurisy with effusion the reaction was stronger in the urine than in the exudation, and in the third stronger in the exudation than in the urine. Two grammes of aspirine were administered in small quantities at half-hour intervals to 2 patients with ascites. Three or 4 hours later some fluid was removed, but only traces of salicylic acid could be found. After administration of aspirine the salicylic reaction could not in any case be obtained in the saliva or blood-serum.

The writers conclude: (1) That aspirine given by the mouth is eliminated more slowly than salicylate of soda both in the urine and in the synovial fluid. (2) Elimination by the synovial membranes is greater than that of salicylate of soda. (3) As aspirine is innocuous the patient can be kept under its influence more completely, and for a longer time than with salicylate of soda.

Influence of Massage on Nephritis.—Erik Ekgren (*Deutsche Med. Woch.*, Feb. 27, p. 150).—Active exercise increases the percentage of albumin in nephritis, and is, therefore, contraindicated. The writer's investigations on 2 patients with chronic granular kidneys, and 1 patient with subacute parenchymatous nephritis tend to show that passive movements and general massage are equally harmful. Both general massage and resisted movements of the upper and lower limbs were followed by considerable increase in the quantity of albumin. Before general massage and active and passive exercises are ordered the urine should always be examined. If albumin is present they are contraindicated or

at least require great caution. The practice of treating renal anasarca by massage should therefore be abandoned or applied only in exceptional cases.

Santonin in the Lightning Pains of Locomotor Ataxia.—Professor Combemale of Lille (*La Presse Médicale*, July, p. 719) recommends santonin for the rapid abolition of the lightning pains of locomotor ataxia and for aborting a "crisis." He gives it in doses of 10 to 15 cgm. ($1\frac{1}{2}$ to $2\frac{1}{2}$ gr.) daily, prescribing that quantity in 4 pills, 2 of which are to be taken at once, and followed after 6 hours, if the pain continues, by the other 2. Doses of 5 to 10 cgm. daily prove effectual in some cases, but the smaller doses have to be continued for some days. On the first appearance of xanthopsis—the earliest toxic symptom—the drug should be suspended.

Picric Acid in Blepharitis (*Semaine Médicale*, Feb., p. 64).—Isidori of Rome has successfully used picric acid in the treatment of ciliary blepharitis. He employs solution of 1 of picric acid in 50 of distilled water and 50 of glycerine, or an ointment of 1 of picric acid in 50 of vaseline. After removing the crusts at the root of the eyelashes and washing the lids with an alkaline solution he bathes the palpebral borders with the solution of picric acid or applies the ointment, taking care to go beyond the margin of the disease. The application is allowed to dry on, and is repeated night and morning. The writer has employed the treatment in 12 cases of ciliary blepharitis, in all of which complete recovery occurred in from 10 to 14 days, although some of the cases were chronic, and had resisted all the usual methods of treatment

SURGERY.

Calcified Aneurysm of the Right Renal Artery in a Boy: Fatal Pulping of the Liver from a Fall.—H. L. Barnard, F.R.C.S. (*Transact. Path. Soc.*, 1901, p. 254).—A boy, aged 9, was admitted to hospital. He had fallen from a horse heavily on his back and right side. He was blanched, in a state of collapse, and he complained of great pain on the right side, but there was no sign of broken ribs. Next day it was clear that there was much blood in the peritoneum, and as distension was rapidly increasing laparotomy was performed. About a pint and a half of black fluid blood was removed by sponging, and a rent in the right lobe of the liver was found and packed. Next day he was very restless and vomited about a pint of altered blood, which was regarded as post-operative hæmatemesis. Soon afterwards he died somewhat suddenly.

NECROPSY.—About an ounce of blood was found in the pelvic pouch, and a little more in either loin. The stomach contained a little blood and bile. In the second part of the duodenum were 3 or 4 punctate hæmorrhages. On the upper and right surface of the liver was a lacerated area about 3 inches in diameter. In the centre was a ragged cavity, half an inch in depth, leading into the liver substance. There was much blood-clot between the right lobe of the liver and diaphragm. On the under surface of the liver was a stellate fracture radiating from the inner part of the renal impression. The largest fissure ran from this point round the right margin of the liver into the ragged cavity on its upper surface. The pulping of the liver was wedge-shaped on section with the apex of the wedge at the point of the renal impression. The whole of the injury was to the right of the gall-bladder fissure.

In the hilum of the right kidney a hard mass the size of a hazel-nut could be felt. It was

thought to be a calculus, but it proved to be a calcified aneurysm on the upper of the two branches of the renal artery. There was mitral stenosis; the mitral orifice admitted only the index finger. The kidney itself had escaped injury, but between the true and fatty capsule on its posterior surface was a considerable hæmatoma, which extended around the posterior surface of the aneurysm. The right kidney was carefully fitted into its impression on the under surface of the liver, and the hard aneurysm was found to correspond to the point from which the fissures radiated and to the apex of the wedge-shaped pulping.

There are two points of great interest. A small calcified and cured aneurysm existed in a boy of 9, and was probably a consequence of embolism from mitral stenosis. The literature of renal aneurysm is meagre. Henry Morris has published a very complete paper (*Lancet*, Oct. 6, 1900) which brings the recorded cases up to 22. A case reported by Oestreich (*Berlin. Klin. Woch.*, 1891, Band. xxviii., p. 1042) is in some respects like the one recorded above. An aneurysm of the right renal artery, of the size of an apple was found at the necropsy on a young man who had died of malignant endocarditis and multiple embolisms therefrom. Some years ago Mr. Barnard saw a little girl who was dying of malignant endocarditis and who suddenly developed a large diffuse swelling in the left loin behind the colon. This was shown at the necropsy to be a large collection of blood which had escaped from a ruptured aneurysm of the renal artery.

The second point of interest is even more extraordinary, for it appears that had the hard aneurysm not existed in the right kidney the fall would not have led to rupture of the liver or bruising of the duodenum, and the boy would



Antero-posterior vertical section of the right lobe of the liver and kidney; the latter has been fitted into the renal impression. The inner half of the sac of the aneurysm has been removed to show its calcified contents *in situ*. A glass rod marks the ureter. The pulping of the hepatic tissue is wedge-shaped, and the apex of the wedge corresponds with the calcified aneurysm.

not have lost his life. The lesions, viz., the pulping of the liver, the punctate hæmorrhages in the duodenum, the calcified renal aneurysm, and the retro-renal hæmatoma, were in a straight line, and it can scarcely be doubted that they

were due to the same violence. The aneurysm is an indispensable link in this chain, and must have either conducted the violence from the loin to the duodenum and liver, or *vice versa*. The force can hardly have been communicated from before back along this track of violence. The lad fell on his back and right side; and had he fallen face downward he would have saved a blow upon his right hypochondrium by alighting upon his hands and knees. Such an application of force could not produce a converging pulping of the liver or conduct the violence so as to bruise the duodenum behind it, much less could it produce a hæmatoma on the far side of the kidney without bruising that organ. The only tenable theory appears to be that the boy fell on his right loin, and produced the retro-renal hæmatoma by direct violence. The blow was not severe enough to bruise the kidney, as so often occurs, and the soft kidney substance diffused the force and did not communicate it further. But the hard resistant aneurysm was driven forward to meet the liver, moving back with all the momentum of the fall, and the second part of the duodenum lying over the hilum of the kidney was caught and crushed between them. The duodenum was bruised over a small area, as described, and the liver was starred by fissures radiating from the point at which the aneurysm was driven into it. The violence spread as it travelled through the substance of the liver, and produced the cone of pulping mentioned, the

base of which appeared upon the surface of the liver, and allowed the free escape of blood into the peritoneum. Perhaps the strangest fact in this strange case is that the aneurysm and renal artery escaped uninjured.

Asphyxia from Pressure on the Chest.—Drs. H. H. A. Beach and F. Cobb (*Boston Med. and Surg. Jour.*, May 15, p. 513).—A muscular man, aged between 30 and 40, was caught in an elevator and held for fully 3 minutes. His face turned black, his eyes protruded, and he bled from the nose. When set free he was unconscious for a few minutes. An hour later he was admitted to hospital, conscious but stupid and in a state of shock. The face was dotted with countless closely set black to reddish-black or blue spots. Between them were minute areas of normal skin. On the neck in front was a sharp line of demarcation; behind the discolouration corresponded to the position of the trapezii muscles, a fact which has not been previously noticed. There were several contusions of the abdomen, a large fluctuating hæmatoma in the left loin and back, and fracture of the eighth and ninth ribs in the axillary line with subcutaneous emphysema in the neighbourhood. Pressure on the blue-black skin had little effect in causing it to become pale. He was never very ill, except on the third day when his temperature rose to 106°, and his breathing was difficult; both lungs were full of râles and the expectoration was somewhat bloody. This condition, however passed away in 24 hours. The hæmatoma in the back was aspirated 6 times; each time from 1 to 2 pints of bloody serum were withdrawn and the fluid reaccumulated with great rapidity. The discolouration of the skin faded rapidly after the third day and the intermediate areas of normal skin became larger. In contrast to this subconjunctival hæmorrhages, which were present, went through the usual changes of absorption. A piece of discoloured skin removed from the neck and examined microscopically showed nothing abnormal.

Only one other case appears to have been studied during life ("REVIEW," p. 111). The knowledge of the subject has hitherto been gained from the bodies of persons pressed to death in struggling crowds or mobs. In the necropsies the blood was found black and fluid,

and filled all the large veins. Punctate hæmorrhages occurred in the loose tissues of the scalp, on the surfaces of the pleura and heart and the abdominal viscera. The lesions are characteristic of great venous engorgement.

Of special interest is the pathology of the discolouration of the skin. Respiration is stopped, the blood becomes carbonized, and the blood tension, at first raised, rapidly falls. Undoubtedly blood escapes under the conjunctiva; but in the skin, while there may be true hæmorrhage, the fact that colour fades somewhat on pressure, and does not go through the changes of tint of hæmorrhage favour the theory of Ollivier and others, that the discolouration is largely due to stasis of carbonized blood in dilated and temporarily paralyzed capillaries. The unique feature of this case is that sections of skin were examined during life. They furnish important negative evidence that stasis is the cause of the discolouration. Why the discolouration was sharply limited to the head and neck cannot be explained.

Threadworms and Appendicitis.—Prof. Bégouin (*Gaz. Hebdom. des Sciences Méd. de Bordeaux*, July 27, p. 363).—A woman, aged 24, was admitted to hospital with the diagnosis of recurrent appendicitis. For 4 or 5 years she had been subject to attacks of pain in the right iliac fossa which lasted 3 or 4 days and disappeared for weeks or months. Once or twice there was a little swelling in the iliac fossa. Menstruation was normal and the general condition good.

There was a slightly tender swelling of the size of an almond below McBurney's point. The diagnosis lay between relapsing appendicitis and sclero-cystic ovaritis. Laparotomy showed the latter condition and the ovary was removed. The vermiform appendix was a little turgid, it was therefore removed. It contained 15 threadworms, fragments of bread, and grains of starch. Some of the threadworms were united in a bundle

forming a sort of plug. There were 4 small superficial ulcers (*exulcerations*) of the mucous membrane in the position of follicles which were turgid.

Metchnikoff has called attention to the relation between intestinal worms and appendicitis (*Bulletin de l'Académie de Méd.*, Mar. 12, 1901, p. 301). He thinks that worms are often the cause of appendicitis and that the administration of vermifuges will prevent and cure appendicitis. More recently (*ibid.*, July 2) Kirmisson and Lannelongue have discussed the subject. But in all these papers the question has been: What is the rôle of the *ascaris lumbricis* and of the *trichocephalus dispar*? The threadworm was never found in the diseased appendix. The writer could find only one reference to threadworms in the excised appendix—a case recorded by Routier which is cited by Guinard in his article upon appendicitis (*Traité de Chirurgie* of Ledentu and Delbet, tome vii., p. 476). Metchnikoff, like most authorities, admits that worms may cause ulceration of the mucous membrane, which may be the starting-point of an infection penetrating the whole intestinal wall, and also that worms may plug the appendix and so increase the virulence of the contained microbes. The latter condition was present in the writer's case.

See also "REVIEW," p. 243.

Treatment of Epistaxis by Curetting.—Dr. G. Hunter Mackenzie, M.D. (*Lancet*, May 10, p. 1318).—On Dec. 29th, 1901, the writer saw a case of epistaxis of about a week's duration which had proved refractory to the usual methods of treatment. The patient was a man, aged 49, who was addicted to alcohol and had slight albuminuria. The seat of the bleeding was readily found, as is usually the case, on the anterior third of the septum, about one cm. above the nasal floor. Under cocaine the bleeding area was freely galvano-cauterised and a pledget of cotton-wool saturated with a solution of adrenalin chloride was inserted. This treatment

proved ineffectual. On the following day the cauterisation and applications of adrenalin were repeated over a wider area and during this process the patient became unconscious and had a convulsive attack. He was assisted to bed, when the hæmorrhage became more intense than ever. He continued to bleed freely for the next 24 hours, and his condition became extremely serious. Further local treatment having proved unsuccessful, on Jan. 1 chloroform was administered, and with a nasal spoon and curette the writer stripped the whole of the mucous membrane off the septum. Profuse hæmorrhage accompanied this procedure but it soon ceased. On the night of the 2nd (34 hours after the curetting) there was moderate bleeding and on the morning of the 4th slight recurrence. The blood oozed slightly from the roof of the nostril in close contiguity to the septum, an area from which the mucous membrane had not been removed. As the bleeding was extremely slight further treatment did not seem necessary. No further hæmorrhage occurred.

This appears to be the first instance in which severe epistaxis has been treated by curetting the nasal mucous membrane.

Suture of Heart Wounds.—Harry M. Sherman, A.M., M.D. (*Boston Med. and Surg. Jour.*, June 19, p. 653).—Since 1896 when the operation was first performed the heart has been sutured 34 times, all the wounds were punctured or incised, except 2 bullet wounds. The injury was inflicted on the ventricles 32 times, the left ventricle being implicated 17 times and the right 15 times. In only 2 cases were the auricles opened, once the right and once the left. In most of the cases the pleura was wounded, and there was hæmothorax. The method of operation varied: either a flap of all the tissues of the thoracic wall was turned up or a resection of two or more ribs was performed. Three operators used catgut for suturing the heart. In the other instances in

which the material is specified silk was used. In most cases the sutures were interrupted, in a few they were continuous. Inclusion of the endocardium was avoided. The thoracic flaps were, of course replaced; in 7 cases drainage of the pleura and pericardium was performed, in 4 of the pleura alone. Of the 34 patients 5 died on the table from hæmorrhage or shock and 10 soon afterwards. These deaths were probably inevitable under any conditions. Of the remaining 19, 13 recovered and 6 died from sepsis. In not one instance was death due to secondary hæmorrhage. Thus the suture of the heart in all the 19 cases was a perfectly successful operation for the arrest of hæmorrhage. The symptoms of wound of the heart are an external wound in the pericardium, the general signs of hæmorrhage, disturbance of cardiac function, and signs of filling of the pericardium and pleura. The left pleura extends so close to the sternum that practically a wound of the heart implies penetration of the pleura. Similarly in exposing the heart for suture opening of the pleural cavity is unavoidable.

See also "REVIEW," Vol. III., p. 400, and Vol. IV., p. 78.

Acute Osteomyelitis of the Vertebrae.—

A. Schönwerth (*Münch. Med. Woch.*, Feb. 18, p. 269).—A healthy man, aged 27, was seized with slight pain in the sacral region during the night of Sept. 2. This increased until by the evening of Sept. 3 he was unable to walk without assistance, or to stoop without intolerable pain, which radiated from the sacrum to the loins and was most intense to the left of the vertebral column. Above the right wrist was a furuncle, which no longer suppurated and was healing. The abdomen was retracted, but not tender. The urine was normal. The last 2 thoracic, and the first 2 lumbar vertebrae, and the lumbar region especially on the left side were tender. The temperature was 102°, the pulse 90. On Sept. 4 the man was obviously dangerously ill, and the temperature rose to 103·8°. He lay on

the back with the hips and knees slightly flexed. The spinous processes of the twelfth dorsal and first lumbar vertebrae, and the left lumbar region were extremely tender, and pressure on the lower ribs anteriorly produced violent pain. There was tenderness between the left anterior superior iliac spine and the umbilicus. On Sept. 5 the temperature rose to 105·4°, but though the pain in the left lumbar region was intense and throbbing, the spinous processes were less tender and the patient could sit up in bed. There was constipation. On the assumption that there was a paranephric abscess the capsule of the left kidney was exposed under chloroform, and the adjacent vertebrae were explored. As nothing abnormal was found the wound was simply plugged with gauze. On Sept. 6 (the fourth day of the disease) the general condition improved considerably. The temperature was 100·4°, and the patient was free from pain and could sit up. There was considerable tympanites. Towards the evening of Sept. 7, however, violent delirium occurred, and death followed on Sept. 8 from progressive asthenia and pulmonary oedema.

NECROPSY. — There were old-standing fatty degeneration of the heart and left pleural adhesions. The spleen was enlarged. To the right of the spinous process of the first lumbar vertebra near the lamina the periosteum was deficient for a short distance in the long axis of the process. The compact bony cortex and some of the medulla were absent, so that a cavity was formed which contained about 1 c.c. of thick yellow pus. Round this was a dark hæmorrhagic area, which extended just beyond the middle line to the left. There was no communication between the osteomyelitic focus and the vertebral canal and the spinal cord, and the remainder of the vertebra was healthy. The pus from the abscess and the blood contained the staphylococcus pyogenes aureus. The general infection doubtless originated in the furuncle on the wrist.

Though the initial symptoms were those of an acute disease of the spine the fact that on the

third day the pain abated and the vertebral column became less rigid, while the pain and tenderness in the lumbar region increased, pointed rather to a paranephric abscess. Constipation and flexion of the hip joint may be present in either spinal disease or paranephric abscess. The 41 cases of acute osteomyelitis of the vertebræ recently collected by Hahn show the difficulties of diagnosis. Operations have been performed only late, after the formation of obvious abscesses, which have given rise to œdema or fluctuation over the affected vertebra. In this case general septicæmia and death occurred in an early stage, before definite localising signs had appeared. The great majority of cases of acute vertebral osteomyelitis occurs in the first 2 decades of life.

See also "REVIEW," Vol. I., p. 143.

Ruptured Gluteal Aneurysm; Transperitoneal Ligature of the Internal Iliac Artery.—Herbert W. Page, M.C., F.R.C.S. (*Lancet*, Aug. 16, p. 430).—A coachman, aged 44, with a history of rheumatic fever and evidences of cardiac and vascular disease, was admitted to hospital on Feb. 23. His illness began 5 weeks before with pain in the course of the right sciatic nerve and tingling in the toes. One day on getting down from his box he noticed a swelling in the right buttock. This swelling steadily increased so that on admission it was huge, reaching from the crest of the ilium to below the great trochanter. It was fluctuant and non-pulsatile, its lower end was dusky, and immediately above the trochanter there was some inflammatory redness. Believing that it might possibly be an abscess, with which diagnosis the man had been sent to the hospital, the house surgeon made a small inch-long exploratory incision a couple of inches above the great trochanter, where the skin was red, but finding nothing except blood-clot immediately closed the wound. The diagnosis clearly lay between rup-

tured aneurysm, simple hæmatoma of unknown cause, and new growth. So markedly fluctuant, however, was the swelling that new growth seemed out of the question, and the belief was held that it was ruptured gluteal aneurysm.

The original exploratory incision was laid open and gradually enlarged in the upward direction. With a spoon and a stream of sterile water more than 2 pints of old and recent blood-clot were rapidly removed. So vast was the cavity that the incision was by degrees extended from the crest of the ilium to below the great trochanter. From the depths of the cavity laminated clot was turned out. Active hæmorrhage was seen taking place from the sciatic notch. This was controlled by sponge pressure until all clot had been quickly removed, when blood was seen to come in spurts from within the sciatic notch, evidently from the gluteal artery itself. This bleeding could be controlled by the finger but the actual bleeding point could not be seen, and evidently lay deeply on the inner side of the bone. After several unsuccessful attempts to seize the bleeding point a lucky hit was made with a pair of forceps bent at a right angle, and the bleeding stopped. As reliance could not be placed on these forceps for the permanent arrest of hæmorrhage, especially as the projection of the handles from the wound made it impossible to secure them safely in the movements of the patient, the internal iliac artery was ligatured.

The point of chief interest was the necessity in the course of the usual operation of turning out the blood-clot of ligaturing the main trunk from which the diseased gluteal vessel sprang. In more accessible parts this hardly called for comment, but in the case of the gluteal artery the opening in the vessel may perchance be intra-pelvic and the application of a ligature impossible. It was a happy chance that the bleeding point was secured by bent forceps on the inner side of the bone, otherwise it would have been exceedingly difficult if not impossible to

stay the bleeding, and the patient might have bled to death before the iliac artery could have been tied. Such a condition cannot be foretold before the ruptured sac is laid open and the clots turned out. It is therefore a question whether in such a case it would not be good practice to secure the internal iliac artery before proceeding to deal with the aneurysm. Transperitoneal ligature in comparison with the old method is easy.

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Perforation of the Appendix within a Hernial Sac: Resection of the Cæcum.—

J. Basil Hall, M.A., M.C. (*Brit. Med. Jour.*, June 28, p. 1601).—Although many cases of inflamed or strangulated herniated appendix have been recorded perforation within a hernial sac is comparatively rare. In the following case the sac contained both cæcum and small intestine, and probably there had been a sudden descent of bowel into an unclosed funicular process, at the mouth of which lay an adherent appendix. This sudden descent tore the appendix from its adhesions, carrying it into the sac, and damaging it sufficiently to produce sloughing and perforation.

A man, aged 23, when lifting a sack 5 days before, felt a sudden acute pain in the right groin and a sensation of something having given way. He then became conscious of a large scrotal swelling, and went home to bed. He felt sick, but there was no vomiting. During the night the swelling disappeared, but on getting up in the morning it came down again. Pain in the scrotum then became severe, and he felt ill and feverish. There was constipation but no vomiting or distension of the abdomen.

There was a right inguinal hernia of the size of a small coconut. The swelling was tender, the upper half tympanitic, the lower dull on percussion and not translucent. The temperature was 99°. The bowels were emptied by

enema and the motions were normal. Next day the temperature rose to 101·4°, but he otherwise seemed well. During the following 2 days the temperature fell somewhat.

Ten days after the accident the sac was opened high up, and the colon exposed. Finding the rest of the sac shut off by recent lymph and adhesions the incision was extended downwards. Buried in a mass of lymph, disorganized blood clot and pus was the cæcum. At the apex of the cæcum was a ragged and irregular mass, the remains of the appendix. Near its base was a sloughy opening out of which pus and fæcal material oozed. The parts were so infiltrated and softened and so thoroughly septic that to return them into the abdomen would almost certainly have resulted in peritonitis. Enterectomy was, therefore, performed.

Having placed elastic ligatures on either side the cæcum, appendix, and about 1½ in. of ileum were resected, and the ends brought together with a Murphy's button. The sac was then removed and the ring closed. Recovery was uneventful.

Although the sac was obviously a congenital one and the ring large there was no history of a hernia in earlier life. Probably the neck of the sac had been blocked prior to the accident, by an adherent appendix. The sudden descent of the hernia, by tearing the adhesions, probably damaged the appendix sufficiently to produce sloughing and ultimate perforation. Perforation evidently caused the fever.

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Congenital Scoliosis.—A. Broca and Albert Mouchet (*Gaz. Hebdom. de Méd. et de Chirurg.*, June 8, p. 529).—Congenital scoliosis is usually due to atrophy of the left half of the twelfth dorsal vertebra. A sixth lumbar vertebra may also be present. Coville (*De la scoliose congénitale Rev. d'orthop.*, 1896, p. 301) found only one case of true congenital scoliosis in 1,015 newborn infants carefully examined. Hirschberger (*Beitrag. Zur. Lehre der Angeborenen*

Skoliosen Zeit-schr. f. orth. Chir., Band VII., Heft. I., p. 129) collected 29 cases, including 2 of his own, but of these only 13 are sufficiently authenticated. The writers described 3 cases in 1898 and 1899 in which radiography showed a supplementary half vertebra placed in the angle between the first and second lumbar vertebræ. Codivilla (*Archivio di ortopedia*, fascic 2, p. 65, 1901) described a case of congenital scoliosis in a girl aged 11. The X rays showed a supernumerary half vertebra between the second and third lumbar vertebræ. A hypertrichosis situated at the convexity of the lumbar region and not associated with spina bifida occulta was also present. Bonnaire (*Bull. Soc. Obstet. de Paris*, 1901, p. 161) showed a fœtus with a large umbilical hernia, and a dorsal scoliosis, with a faulty attitude of the lower limbs, and a malformed pelvis. The writer in 1894 showed a hydrocephalic fœtus with dorso-lumbar scoliosis. Out of the 35 cases only 5 have been studied by radiography. Four of these showed a supernumerary vertebra between two lumbar vertebræ.

The cause of this disease is sometimes obscure, but it can generally be explained by disturbance in the ossification of the vertebræ in the early months of foetal life, which results in hyperplasia or hypoplasia. In Codivilla's case the hyperplasia which produced the supernumerary vertebra passed to another portion of the mesoderm producing hypertrichosis.

Recognition of the congenital nature of the scoliosis is easy if the patient is seen early and the parents give a clear account of the deformity, but if there is no clear history the clinical appearances are similar to those presented by rachitic scoliosis. It is, however, rare to find rickets localised to the vertebral column. Radiography will show the anatomical condition of the spine.

The prognosis is unfavourable. There is no spontaneous amelioration, and the condition is very intractable. A plaster jacket worn

for several months and followed by massage and gymnastics gives the best results. The jacket should be applied and adjusted under a general anæsthetic, otherwise the most perfect correction of the deformity is not obtained. The writer's method is to administer the chloroform to the patient in bed. The tongue is drawn out by forceps, then Sayres' method of suspension is employed, the bandages being placed on the head, and a small wooden cylinder placed between the teeth to prevent biting of the tongue. The cylinder is attached to the tongue forceps by a piece of bandage. The patient is then rapidly suspended, and a few drops of chloroform are sufficient to maintain muscular relaxation during the application of the jacket.

Remittent Testicular Fever.—Faraggi records 2 cases (*Archives de Méd. des Enfants*, Jan., p. 34) of a somewhat unusual character in which febrile attacks in children apparently depended on descent of the testicle towards the inguinal canal.

CASE 1.—A boy, aged 6, was feverish, delirious, and drowsy, and responded with difficulty to questions. His previous health had been good. No physical signs were detected in the thorax. There was no evidence of meningitis. The tongue was furred, and the temperature was 103.3°, and the pulse 140. The following night he was very excited, and complained of intense thirst, but the symptoms subsided towards morning. The temperature was lower, and pulse 120, but towards evening the pyrexia returned. In the right iliac region a small tender swelling was found at the level of the inguinal canal. The right testicle was undescended. Hence it was concluded that the swelling was the testicle impacted in the inguinal canal. The child remained in the same condition for a week, with slight morning remissions of temperature. Then all symptoms suddenly disappeared. The testicle had descended into the scrotum. A

month later all the symptoms suddenly returned. The testicle had again passed up into the canal. On the evening of the sixth day it again descended into the scrotum and the symptoms disappeared.

CASE 2.—A child, aged 7, was taken suddenly ill with considerable pyrexia, thirst, and all the signs of some serious disease. The symptoms were the same as in Case 1, with the addition of epistaxis and troublesome vomiting. In all, 3 such attacks occurred.

A radical cure was suggested in each case but was declined. It then occurred to the writer to apply a bandage so as to compress the inguinal canal and prevent the ascent of the testicle. The results were satisfactory. No relapse has occurred.

Spastic Mydriasis Due to a Foreign Body in the Ear.—Bandelier (*Münch. Med. Woch.*, May 27, p. 875).—A woman, who was under treatment for slight apical phthisis, had for some weeks marked dilatation of the right pupil. This reacted to accommodation and light, though sluggishly, but never contracted to the same extent as the left pupil. The fundi were normal and no cause could be discovered. The right auditory meatus was then found to be full of wax. The syringe was used, and a large mass of cerumen, in which was embedded a pearl bead, came away. The next morning the mydriasis had disappeared, and the pupil remained normal during the 6 months for which the woman was under the writer's care. Spastic mydriasis may be produced not only by direct stimulation of the dilating fibres of the sympathetic, but by irritation of the sympathetic plexuses connected with the vascular system. The vaso-motor branches to the vessels of the external ear and the tympanum are derived from the cervical sympathetic. Possibly also the auricular branch of the vagus was also concerned, since, if stimulated, it produces reflex

vaso-constriction of the auditory vessels. Probably foreign bodies in the external meatus are a more frequent cause of mydriasis than is usually supposed, and search should always be made for them in cases of doubtful etiology.

Prevention of Dulling of the Laryngeal Mirror.—Walker Downie, M.B., F.F.P.S. (*Lancet*, March 1, p. 589).—An ordinary laryngeal mirror is polished with a soft cloth and the surface of the mirror is rubbed or pencilled over with "le crayon anti-buée," which dulls the surface. The mirror is again wiped or polished with a soft cloth and the surface will again be clear and bright. It may then be breathed upon without its brightness being affected. After being so prepared the mirror may be used for laryngoscopic examination, and it may be retained in contact with the palate or in any part of the buccal or pharyngeal cavities as long as may be desired, without the reflecting surface being affected in the slightest degree by the breath. The crayon causes no scratching of the glass nor does its use interfere with the cleansing and sterilizing of the mirror. It may be obtained in Glasgow from Messrs. W. B. Hilliard, 63, Renfield-Street.

Chancre of the Clitoris.—Druelle (*Progrès Méd.* Sept., p. 163).—Syphilitic chancre of the clitoris is a rarity. In 249 cases of specific sores on the female external genitals, Fournier has seen it only 10 times. Druelle reports 3 cases, one affecting the prepuce of the clitoris, the other the glans, and the third the subclitoral region. The last chancre was peculiar in that it spread on to both of the labia minora and the part on the under surface of the clitoris united the two lateral segments of the sore. In women suffering from syphilis swelling of the clitoris ought to cause a chancre to be looked for.

OBSTETRICS AND GYNÆCOLOGY.

Puerperal Gangrene of the Lower Limbs.—Hagemeyer (*Wien. Klin. Rundschau*, Sept. 29, 1901, p. 685).—A woman, aged 40, had a weak heart for 8 years, since an attack of influenza. She had been married 12 years and had had 5 labours. After the 2nd there were rigors and pyrexia. In the 3rd, after a premature birth, the placenta had to be removed manually. In the 5th month of the 4th pregnancy the right arm and leg became paralysed and there was aphasia. These symptoms disappeared in 5 days. There were then several floodings and a dead child was born at the 7th month. On the 9th day of the puerperium she was seized with great pain and sensations of weakness and numbness in the right leg, which progressed to complete anæsthesia. There was no œdema. These symptoms disappeared completely after a week's massage and the application of heat. The 5th pregnancy terminated by the birth of a living child at the 8th month. There had been profuse flooding a fortnight before. Early on the 9th day of the puerperium the left leg below the knee became cold and anæsthetic. There was at first neither pain nor swelling, but towards evening, after elevation, the leg became extremely painful. Next morning there were several bluish patches in front of the ankle, and during the following days the toes became dry and horny and the foot and lower part of the leg blue and discoloured. On the 14th day of the puerperium and the 5th of the disease the pulse was 106, small and irregular, and the temperature 99°. The cardiac dulness was increased to the right, and the apex beat was to the outer side of the nipple line. There was a systolic murmur of varying intensity at the apex and in the 3rd left interspace. The urine contained neither albumin nor sugar. The foot and ankle were dry and waxy; higher up the epidermis was macerated and raised into scattered bullæ. About 1½ in.

below the knee was a line of demarcation; above this sensation was normal, and the thigh was not swollen. The pulse in the femoral artery in Scarpa's triangle was distinct though weak. On the 16th day of the puerperium amputation was performed through the lower third of the thigh. The divided vessels were healthy. In the popliteal artery just before its division into the anterior and posterior tibials was a tough adherent thrombus. Every artery in the leg was thrombosed, and the veins contained soft clots, probably secondary. The wound healed by first intention and recovery followed.

The proximate cause of the gangrene was doubtless embolism of the popliteal artery. This in turn probably depended on thrombosis in the left ventricle of a heart weakened by advanced myocarditis, the result of the attack of influenza 8 years before. The hemiplegia in the preceding pregnancy no doubt was caused by cerebral embolism, and the subsequent numbness of the right leg was probably due to embolism with incomplete occlusion of the right popliteal artery.

Of 22 cases of puerperal gangrene, endocarditis was present in 3. In 1 the gangrene was attributed to the pressure on the iliac veins of a large hæmatoma due to rupture of the uterus. In 2 the gangrene was probably due to local asphyxia. Of the rest the origin of the gangrene was more or less obscure. Probably the heart was the cause more frequently than was supposed. In most cases the veins were blocked as well as the arteries, and in one there was thrombosis in every vein in the leg, while the arteries were free. Exceptionally, phlegmasia alba dolens may terminate in gangrene. The prognosis is generally favourable in the dry forms of gangrene, but bad in the moist septic variety. In the uncomplicated apyrexial form amputation should be deferred until a line of demarcation has formed, but in cases of rapidly

spreading gangrene, accompanied by pyrexia and a running pulse, immediate amputation well above the disease is indicated.

See also "REVIEW," Vol. IV., p. 635.

Hæmoglobinuria in Successive Pregnancies.—L. Brauer (*Münch. Med. Woch.*, May 20, p. 825).—A woman, who had lived in a malarial district, and had there, without presenting any acute symptoms, become languid and anæmic, married in July, 1893. The birth of a girl in June, 1894, was preceded by pruritus and diarrhœa, and the same symptoms recurred before the premature birth of a girl in the seventh month in April, 1895. Later there was an early abortion. A girl was born in the seventh month in Feb., 1898. Parturition was preceded by pruritus, weakness, anæmia, frequent attacks of syncope, and a dark discolouration of the urine, which, however, was not examined. In Oct., 1900, the patient, then aged 33 and in the fifth pregnancy, became depressed and apathetic. Early in Nov. the urine became opalescent, and contained albumin. Later this was found to be due to hæmoglobin. There was slight jaundice. On Nov. 14 the jaundice was marked, the stools were clay-coloured, and there were intolerable pruritus and night terrors. The urine was scanty and contained much hæmoglobin, albumin, bile salts, urobilin, and a few red corpuscles, but no renal casts. The liver and spleen were enlarged. On Dec. 11, 1900, a boy was born about 3 weeks before term. There was marked icterus neonatorum. The mother recovered, though she remained weak and hysterical for some time. The jaundice and pruritus rapidly disappeared, and the urine became normal. On Jan. 14, 1902, 3 weeks before term, another boy was born, who also suffered from icterus neonatorum. Towards the end of Dec., 1901, the mother became dull and anæmic, and complained of pruritus and insomnia as in the previous pregnancy. On Jan. 8, 1902, the spleen

was enlarged, but the liver was normal. There was slight jaundice. The urine, which a few days before had been normal but for an excess of urobilin, contained bile pigment, free hæmoglobin, and a small quantity of albumin, but no blood corpuscles or renal casts. After delivery the apathy and pruritus persisted for a few days, and there were attacks of diarrhœa with occasionally acholic stools. The urine soon became normal and recovery followed.

The history of pruritus and dark urine in previous pregnancies makes it probable that these also were accompanied by hæmoglobinuria. The writer has failed to find a similar case recorded, but believes that unrecognised hæmoglobinuria may occasionally be the cause of some obscure cases of jaundice in pregnant women. The slight swelling of the liver and spleen and the prominence of nervous symptoms suggested acute atrophy of the liver, which is relatively common in pregnancy. The hæmoglobinuria, however, fully explained the jaundice. For hæmoglobinæmia necessarily precedes hæmoglobinuria. The free hæmoglobin is partly excreted unchanged in the urine, partly retained in the liver and converted into bile pigments. The bile is, therefore, abnormally dark, thick, and ropy. The smaller bile ducts become obstructed, jaundice appears, and the stools, in spite of over-production of bile are acholic. The recurrence of the hæmoglobinuria in the later months of successive pregnancies and its disappearance in the puerperia rendered a causal connection certain. There was probably an intoxication with metabolic products. The usual causes of paroxysmal hæmoglobinuria, such as fatigue and chill were excluded, and there was no definite proof of malaria.

Puerperal Multiple Neuritis. — Dr. Cassuto (*Jour. de Méd. et de Chirurg. Pratiq.*, Feb. 10, p. 3). — The writer records a case of polyneuritis during pregnancy which termi-

nated in complete recovery. There are 2 forms of puerperal polyneuritis—that of pregnancy and that of the puerperium. The latter is the more frequent and follows puerperal septicæmia. So rare is the former that Prof. Vinay, of Lyons, could find recorded only 3 authentic cases and they were all grave, the phrenic nerve being involved in one. In all there was uncontrollable vomiting.

The writer relates a case in which the neuritis came on during the fourth month of the fifth pregnancy with uncontrollable vomiting. Oliguria and albuminuria followed. A little later there were girdle pains with dyspnoea and abdominal tension, and the general condition became so serious that the question of inducing abortion was raised. Towards the end of the 7th month there were severe headache, slight convulsions, and slight paresis of the upper limbs, especially of the extensor muscles; in the lower limbs there was formication, shooting pains in the calves, and such feebleness that standing was impossible. Labour was premature and a dead and macerated foetus was born. The puerperium was normal but the patient's general condition did not improve, and two months later the upper limbs were completely paralyzed; also, the abductors of the thigh, the quadriceps extensor, the psoas, and the muscles of the antero-external region of the leg. Under strychnine, massage and electricity, improvement soon commenced and in 3 months recovery was complete. The writer thinks that the neuritis was probably due to auto-intoxication, which also caused the albuminuria and vomiting.

Eclampsia treated by Sub-Arachnoid Injections of Tropacocaine.—Kurt Kamann (*Münch. Med. Woch.*, May 20, p. 831).—A primipara, aged 20, was admitted comatose to hospital on Feb. 20, at 9.30 a.m., at the end of the ninth month of pregnancy. The pregnancy

had been normal until the preceding day, when at 8.30 p.m. convulsions appeared. There had been 17 attacks in all and consciousness had not returned since the first. A midwife had made one vaginal examination. After a rectal injection of chloral, examination showed that labour had commenced. The os admitted 2 fingers, and the membranes were unruptured. The vertex presented in the left occipito-anterior position. The upper limbs and to a less extent the legs and the abdominal walls were oedematous. At 11.10 a.m. there was another fit, which was cut short within 1 minute by the inhalation of chloroform. The pulse rose to 160, the respirations to 60, and the temperature to 101.4°. The urine obtained by the catheter contained a large amount of albumin, the pulse became uncountable, and death appeared to be imminent. At 12.50 p.m. Prof. von Winckel ordered the injection of 1 c.c. of a sterilised solution of tropacocaine into the sub-arachnoid space between the fourth and fifth lumbar vertebræ, in the expectation, that, the pains of the dilatation being absent, there would be no reflex convulsions. The immediate result was excellent. At 1.40 p.m. the pulse was 120, and the respirations were 40. At 2 p.m. the pulse was 104 and regular. No further attack occurred, and at 4 consciousness returned. The patient felt well and conversed rationally. The os was of the size of a half-crown, the temperature was 100.6°. Quiet sleep was obtained after rectal injections of chloral. At 9 a.m. on Feb. 21 there was restlessness, and the uterine contractions were again painful. A second intra-arachnoid injection of 0.05 gm. (about $\frac{1}{4}$ gr.) of tropacocaine was given. Eight minutes later analgesia was complete below the umbilicus. At 10.45 a.m. a living female child was born. Thirty-five minutes later the placenta was expelled. There was no hæmorrhage. The temperature was normal. Towards evening there was restlessness with severe dorsal pain near the injection track. Next day the temperature was 98° and the pulse 73. The pains in the head, back, and trunk were so

severe as to require the injection of morphine. The urine obtained by catheterism contained 0·2 per cent. albumin, but no sugar. On Feb. 23 the patient was dull and apathetic, and became jaundiced. Thereafter her condition steadily deteriorated. The skin was generally hyperæsthetic, and the œdema increased. On Feb. 24 the temperature rose to 104°, and there were cough and dulness over the apex of the left lung posteriorly. She died comatose 4½ days after delivery.

NECROPSY.—There was some flaky-yellow fluid in the abdominal cavity but no peritonitis. There was left posterior apical pneumonia. The liver was somewhat swollen and contained numerous yellow patches of necrosis; the vena portæ was healthy. There was parenchymatous nephritis. Some serous infiltration of the parametrium was present but there were no signs of sepsis. There were some hæmorrhages in the epidural fat round the needle track. The left lung and liver contained emboli which consisted of placental cells.

The writer believes that sepsis, Weil's disease, acute yellow atrophy of the liver, and phosphorus poisoning could be definitely excluded, and that the fatal issue could not be attributed to the tropacocaine injections, as such symptoms have never been observed. The extent of the hepatic necrosis made it probable that the process had begun before the appearance of eclampsia. Von Winckel attributed it to some toxin derived from the foetus. However this may be, the fact that death occurred from pneumonia and hepatic necrosis does not affect the fact that the first effect of the tropacocaine injections was to improve the general condition and suppress the convulsions.

cases of childbirth are recorded in women at ages ranging from 55 to 65, and even 70 years, who up to the date of conception menstruated more or less regularly. But conception after cessation of menstruation and the appearance of other signs of the menopause is much rarer.

A woman commenced to menstruate at 12, and married at 20 a man a few months her senior. At 40 she was the mother of 12 children. She never had a miscarriage. From this time she had regularly recurring and painless periods, lasting 3 or 4 days, until 46, when the usual symptoms of the menopause appeared, menstruation ceased, all sexual feeling was lost, and her weight slightly increased, the growth of abdominal fat being very obvious. Three years later, in Aug., 1901, in her forty-ninth year she gave birth to a healthy male child. After weaning the baby, when a few months old, menstruation returned, the flow lasting only one day, and being accompanied by severe pain. Menstruation recurred regularly every 4 weeks. Sexual desire reappeared with the first period.

Lavasseur recorded the case of a woman, aged 50, who had a living child 2 years after the cessation of menstruation (*Gaz. Hebdom.*, 1873). A woman who had not menstruated for 2 years was attended in her forty-ninth year in her confinement by Underhill (*American Jour. Obst.*, 1879). Priou relates the case of a woman who began to menstruate at 16, married at 28, and had 6 children, the last being born at 48; she suckled this child, and saw no catamenia afterwards (*Bulletin de la Soc. Méd. d'Angers*, 1865). Twenty-four years later, at 72, she menstruated at monthly intervals for 6 periods. Menstruation then stopped, and in 2 months she gave birth to a two-months foetus. Depasse relates the case of a woman who ceased to menstruate at 56, and at 59 had a healthy baby, which she weaned on her sixtieth birthday (*Gaz. de Gynéc.*, 1891). Pearson of Stalybridge recorded the fact that a woman had her tenth baby 8 months after cessation of menstruation.

Pregnancy after the Menopause.—G. Hann, M.R.C.S., L.R.C.P. (*Jour. of Obst. and Gynæcol.*, Sept., p. 290).—In nearly all the published cases of pregnancy late in life persistence of menstruation beyond the usual time of the climacteric has been noted. Thus

Pregnancy and Labour in Locomotor Ataxy.—R. P. Ranken Lyle, M.D. (*Jour. of Obst. and Gynecol.* Sept., p. 285).—A woman, aged 39, 9-para, who had locomotor ataxy for 6 years, was on March 18, 1902, delivered at term of a still-born male child. She was twice married, first at 17, and had 5 children by the first husband. The first and second children were still-born. Symptoms of locomotor ataxy began 6 years ago, and 2 years later she became markedly ataxic. She was married a second time in the following year. Some months later a child was born, the labour was painless, and in every respect similar to the one now described. The child lived 18 months. Vomiting commenced about this time, and has continued ever since. This labour was followed by 2 abortions at the second month. In the last pregnancy the vomiting became aggravated, and incontinence of urine commenced, a feeling of heaviness in the lower abdomen was felt until the child was born. She could get about during 5 months of the pregnancy only by holding on to the furniture. Then she had to take to bed on account of difficulty in walking and also to relieve the severe pain in the back. She felt the movements of the foetus until the day before birth.

The first intimation she had of labour was the rupture of the membranes. Labour was perfectly painless, and on being relieved of the feeling of heaviness in the lower abdomen she put her hand down and ascertained that the child was born. This was 2 hours after the rupture of the membranes. The placenta was easily expressed, the uterus contracted firmly but painlessly. The puerperium was normal.

She is now completely bedridden, and requires assistance to turn in bed. She is greatly emaciated and incontinence of urine is complete. The bowels are always constipated, and act only with the aid of an aperient. There appears, however, to be control over the sphincter ani. Vomiting has been much less severe since the birth of the child.

Solid Paraffin in Uterine Prolapse.—Pankow (*Centralbl. f. Gyn.*, June 28, p. 689) showed a woman, aged 62, before the Leipsig Obstetrical Society with a total prolapse of the uterus, which no pessary would rectify. He heated paraffin with a melting point of 47° or 48° C. until fluid, and allowed it to cool until on the point of solidifying. He then introduced it piecemeal into the vagina, which had previously been smeared with glycerine, and moulded it so as to fill and distend the vaginal fornices. The whole vagina was then plugged with paraffin to within about 1 in. of the vulva, and the patient was kept in bed for an hour until it had completely set. The result was that she was able to earn her living by hard work, and that the prolapse was completely removed. Six weeks later the paraffin was removed. A small pressure sore, due to a pessary previously worn, had healed, and on straining there was only slight bulging of the anterior and posterior vaginal walls, instead of, as formerly, immediate prolapse of the whole uterus. Paraffin was again introduced. It is still worn. The method appears to be especially suitable for cases in which pessaries fail to retain a prolapse and operation is refused; it requires no special skill.

NOTES.

THE FAILURE OF THE MICROSCOPE IN THE DIAGNOSIS OF CANCER.—For many years Mr. Jonathan Hutchinson has insisted on the unreliability of the microscope in the diagnosis of doubtful cases of cancer and on the importance of early diagnosis and operation based on the clinical features. He says: "Characteristic appearances in the mode of growth and the manner of ulceration are almost always obvious to the instructed eye before the histological conditions have become trustworthy. Thus in the early stages cancerous growths are not histologically cancer: chronic inflammatory changes almost invariably precede, for a longer or shorter period, definitely malignant ones. A negative result with the microscope often begets false security and leads to an irretrievable loss of time" ("REVIEW," Vol. II., p. 641). To the *Bristol Medico-Chirurgical Jour.* for Sept., Mr. C. Hamilton Whiteford has contributed a useful paper showing the erroneous-ness of the reliance commonly placed on the microscope in the diagnosis of cancer. He has repeatedly seen the microscopic diagnosis of carcinoma, sarcoma, and inflammatory swelling subsequently disproved. When the clinical features and naked-eye appearances on section fail to settle the diagnosis he has generally found the microscopic report useless. He has collected the opinions of a number of authorities who all oppose the current practice of relying on microscopic examination in diagnosis. Sir William M. Banks (*Lancet*, 1900, i., 846) says that the differential diagnosis between chronic interstitial mastitis and cancer is to be made by cutting through any suspicious mass or nodule. "The section which

an experienced surgeon makes with a knife through a fresh piece of carcinoma will enable him to give a far more certain opinion than the microscopist can. Not that I would disparage microscopic examination. When it coincides with the naked-eye view so much the better, but when they differ the history and the look and feel of the fresh section constitute the most trustworthy guide." Mr. J. Knowsley Thornton says (*Brit. Med. Jour.*, 1896, i., 269): "Though formerly an enthusiast with the microscope, I regard the knowledge which it gives as over-rated, especially in regard to new growths. If I had to choose between the microscope and clinical observation in deciding what was malignant and what benign, I would rather be guided by the latter, though the microscope is useful in suggestion and in confirmation. It should not be the arbiter in doubtful cases." Dr. H. D. Rolleston and Mr. H. W. J. Marks, in an article on "Primary Malignant Disease of the Supra-renal Bodies" (*American Jour. of Med. Sciences*, Oct., 1898), point out that it is almost impossible to differentiate histologically an adenoma disorganised by hæmorrhage from a primary malignant growth. Mr. Marmaduke Sheild says in a lecture on "Mammary Cancer" (*Lancet*, 1902, i., 643): "The naked-eye appearances on exploratory incision are more likely to lead the surgeon aright than microscopic examination. When I am in doubt between inflammatory tissue and early cancer the same doubt occurs to the microscopist if only he possesses the somewhat rare attributes of a sceptical mind and accuracy of observation. On the other hand, I have known serious prognostic difficulties from relying

too certainly upon dubious microscopic appearances. I depend more and more upon naked-eye appearances and less upon microscopic, and unless a nodule of cancer be found showing the typical appearances on section to the naked-eye I am cautious regarding diagnosis made by the microscope." At the Royal Academy of Medicine in Ireland, Mr. Myles, in a discussion on "Cancer of the Tongue," said (*Lancet*, 1897, i., 456): "Microscopic examinations of scrapings or of fresh sections of the tongue are absolutely unreliable. Professor Hamilton of Aberdeen found in the tongues of persons over the age of 55 changes identical with those usually associated with epithelioma. He placed side by side with them sections of clinical epithelioma and the most expert pathologists were unable to distinguish between the two."

THE CONVEYANCE OF TYPHOID FEVER BY SOIL, FABRICS, AND FLIES.—By numerous careful experiments, which are described in a paper read at the recent meeting of the British Medical Association, Major R. H. Firth and Major W. H. Horrocks, R.A.M.C., have shown that other than a water-borne origin of typhoid fever must be recognised. They inoculated ordinary soil with emulsions of cultures of the typhoid bacillus and recovered the organism as late as 74 days afterwards. From soil allowed after inoculation to dry into dust, the bacillus was recovered as late as 25 days afterwards. From a piece of khaki drill, fouled by liquid typhoid fæces and allowed to dry, the bacillus was recovered on the seventeenth day. From an emulsion house flies were found to convey the bacillus on their heads, legs, wings, and bodies.

These experiments show how areas fouled from leaking cesspools or by surface

pollution may become endemic foci of typhoid fever. To prevent infection dejecta—both urine and fæces—should be disinfected on leaving the body. The ideal method of disposal of sewage is destruction by fire, but this, though possible in small communities under primitive conditions, is impossible in towns, where the dejecta on leaving the body are removed by either water carriage or some pail or dry-earth system. These experiments show that the dry earth or pail closet system, as ordinarily carried out, is dangerous. The possibilities of local dissemination of infective matter, either as dust or by flies, are great. Unless the dejecta are at once removed, burnt, or deeply buried, they are a menace to the public health. In the water carriage of sewage the danger of local infection is practically nil, but the real difficulty commences at the termination of the sewer. All water supplies receiving affluents from sewage are dangerous unless subjected to sand filtration. If this process is followed by biological treatment and completed by land filtration the risk to the public health is reduced to a minimum.

The capacity of the typhoid bacillus to withstand prolonged desiccation on fabrics shows how infection may occur in those occupying dormitories and common rooms in schools, asylums, infirmaries, and barracks. One room is used for sleeping, for brushing and dusting clothes, and, often, for taking meals. The residents should not take their meals or store their food in rooms used for sleeping or general use. These experiments explain how direct infection occurs among soldiers crowded in tents. The necessity of not only personal cleanliness but also of avoiding overcrowding of men in tents, and of tents upon areas, is obvious.

PROF. WRIGHT'S ANTI-TYPHOID INOCULATION STATISTICS. — In the *Lancet* of Sept. 6, Prof. A. E. Wright, of Netley, describes the results of Anti-typhoid Inoculation in the late South African War. The article is accompanied by two tables, of which Table II. is a critical examination of the statistics embodied in Table I. Prof. Wright has in view the student of statistics seeking to know how far statistical canons have been observed. Table II. is a check upon Table I., and those who take the trouble to wade through and master its numerous statements will be convinced of the untruth in the present instance of the saying that statistics can be made to prove anything. From some 24 returns in Table I. it appears that there was at least a two-fold reduction in the incidence of typhoid fever in the inoculated. In certain cases the reduction varied from a six-fold to a twenty-eight-fold. Superadded to the diminished incidence of the disease owing to inoculation there is a striking diminution of case mortality, attested by extensive statistical material derived in great measure from the Staffs of the Civil Hospitals in South Africa. In the aggregate the proportion of deaths to cases among the inoculated is approximately half that among the uninoculated. But, on the other hand, the reduction of death-rate among the inoculated often exceeded, and seldom fell below a four-fold rate.

In Table II. the statistics of Table I. are checked from as many as 8 points of view, each of which has several sub-classifications. Thus the system of enumeration on which the statistics are based is examined, as also the

comparability of the inoculated and uninoculated groups. Again, the statistics are scrutinised—and this is most important—from the point of view of the trustworthiness of the diagnosis of typhoid fever which was arrived at, of the classification of the sick into inoculated and uninoculated respectively, and of the respective case mortalities amongst the inoculated and uninoculated. Lastly, the questions are considered (1) of inoculated persons infected before protection had been established, (2) as to whether the statistics throw any light on the duration of the conferred protection, and (3) the general accuracy of the work of compilation is examined.

The questions and answers regarding the trustworthiness of the diagnosis of the disease are of extreme importance in view of the uncertainty as to the exact nature of much of what has been described as "enteric." The diagnosis was sometimes rendered difficult by prevalence of malaria and other forms of tropical fever. Errors in diagnosis occurring, as it may be assumed that they would, in a similar percentage of inoculated and uninoculated cases, would not vitiate the general result, though they would tend to hide any differences between inoculated and uninoculated. For instance, in the statistics of the garrison of India in 1900, the number of the inoculated is wrongly stated. The error probably amounts to about 600, plus or minus. In relation to the broad issues such an error is insignificant. For it is a matter of subordinate interest whether the diminution of mortality in the inoculated was the registered 4·4-fold diminution, a 4·8-fold, or a 4-fold.

LEADING ARTICLES.

DEUTSCHE MED. WOCH., Aug. 28, p. 626.

Typhoid Fever without Intestinal Lesions.

By Dr. ARTHUR BLUMENTHAL.

A well nourished woman, aged 23, in the fifth month of pregnancy, was admitted to hospital on the tenth day of an acute illness, the onset of which was marked by headache, nausea, apathy, and pyrexia. Vomiting and diarrhoea soon followed. The face was flushed, and there was orthopnoea with cough and expectoration. The ankles were œdematous. The tongue was dry and fissured. The heart sounds were normal. The abdomen was distended, but pliable and only slightly tender. The uterus reached half way to the umbilicus. Rose spots were scattered over the thorax and abdomen. Owing to tympanites enlargement of the spleen was not demonstrable. There were typical typhoid stools. The temperature was 104°, the pulse 120 and dicrotic, and the urine gave the diazo-reaction and contained albumin. There was nocturnal delirium. Widal's reaction was positive in a dilution of 1 in 150. On the fourth day after admission abortion occurred. Cultures from the foetal spleen remained sterile. The temperature continued at about 104°, the pulse between 120 and 130. The lochia were normal. There were from 3 to 14 pea-soup stools daily, and the cough, expectoration, and dyspnoea became steadily worse. The sputum contained diplococci but no typhoid bacilli. Ten days after admission death occurred with pulmonary symptoms.

At the necropsy no typhoid ulcers were found in the intestines. The spleen was enlarged, soft, and diffuent. In the lungs were broncho-pneumonic patches. The ileo-cæcal mesenteric glands were enlarged and softened. The jejunal mucosa showed numerous hæmorrhages, that of the ileum was pale and succulent, and contained in its lower portion some slightly enlarged follicles, that of the cæcum and descending colon was slightly injected. The interior of the uterus was, for the puerperium, normal. The pathologist, Prof. Benda, considered that the diagnosis of typhoid fever was not justified. But though an attempt to obtain cultures of typhoid bacilli from the blood had failed during life the spleen post mortem was found to contain numerous motile bacilli, which were agglutinated by the serum of a patient convalescent from typhoid fever in a dilution of 1 in 150, and did not coagulate milk, or produce gas in grape-sugar agar, *i.e.*, had all the characteristics of the *B. typhosus*. The broncho-pneumonic patches contained no typhoid bacilli.

Chiari and Kraus divide atypical cases of typhoid fever into 3 classes:—

(1) Those in which the symptoms are typical, but there is absence or only slight degree of local intestinal lesions, the splenic tumour, or enlargement of mesenteric glands.

(2) The bacilli instead of remaining localised in the intestine, spleen, and mesenteric glands may attack the pleura ("REVIEW," Vol. III, p. 217), lungs ("REVIEW," Vol. V, p. 555), thyroid ("REVIEW," Vol. IV., p. 479) or parotid glands, larynx, gall-bladder ("REVIEW," II. pp. 426 and 661), kidneys, testes ("REVIEW,"

Vol. IV., p. 391), periosteum, meninges ("REVIEW," Vol. III., p. 554), endocardium, or tympanum, or may be primary localised in one or more of these.

(3) There may be typhoid septicæmia without local lesions. This form is commonest in the foetus *in utero* of women attacked by typhoid fever. Septicæmia may of course occur when local lesions are present: the bacilli have been repeatedly obtained from the blood ("REVIEW," p. 165). Septicæmia without intestinal lesions is rare. Du Cazal reported a case in which the intestines and mesenteric glands were normal, but the spleen was enlarged and contained typhoid bacilli. Meunier observed one in which typhoid bacilli were present in the blood, but the intestines were normal. There was also miliary tuberculosis. Chiari reported 7 cases in which the Widal reaction was positive though at the necropsy the usual signs of typhoid fever could not be found. Five of these, in which typhoid bacilli were found, were complicated by intestinal tuberculosis, so that the splenic tumour and enlarged mesenteric glands were explicable otherwise than by typhoid fever.

In the writer's case the enlarged intestinal follicles and mesenteric glands contained no typhoid bacilli. Probably they gained an entry through the intestine, although they did not remain there sufficiently long to produce typical lesions.

See also "Rare forms of Typhoid Fever" ("REVIEW," Vol. IV., p. 350).

BOSTON MED. AND SURG. JOUR., Sept. 4, p. 272.

Appendicitis in Pregnancy.

By F. D. DONOGHUE, M.D.

A woman, aged 36, became pregnant for the second time in May, 1901. On Aug. 9, at 11

p.m., she was seized with severe epigastric pain which was accompanied by vomiting. She had been constipated. Next day the pain and vomiting continued. The temperature was 100° and the pulse was 90. There was marked rigidity of the abdominal muscles, especially on the right side. The pain became localised at McBurney's point. In the evening the pain had diminished, but the temperature was 100·5°, the rigidity was marked, especially on the right side, and McBurney's point was very tender. An incision was made through the outer border of the right rectus muscle. The appendix was dark coloured, full of concretions, and surrounded by purulent serum which was partially walled off by fresh adhesions of the omentum. Cloudy serum welled up from the side of the pelvis and was sponged out. The appendix was removed and the wound was closed except so far as to allow gauze drainage. The specimen showed diffuse interstitial purulent appendicitis and peri-appendicitis. Recovery was interrupted by rhythmical pains which seemed to threaten abortion, but they were controlled by morphia. Normal labour occurred on Feb. 26, 1902.

Few cases of appendicitis during pregnancy have been recorded, though the child-bearing period covers the ages at which appendicitis is most common and though constipation is common in pregnancy. Mixter has reported a case of operation on an appendicular abscess after premature delivery of a dead child at 7 months (*Boston Med. and Surg. Jour.*, Dec., 1891). Mundé has described a case of premature delivery of a dead child induced by acute appendicitis (*Med. Record*, 1894). A few cases have since been recorded. They give the impression that appendicitis is the most fatal extra-uterine complication of pregnancy. In cases operated on previously to 1898 a maternal mortality varying, according to

different writers, from 30 to 85 per cent. and a foetal mortality varying from 49 to 90 per cent. were recorded. A few cases operated on subsequently show better results, due principally to early operation. The high mortality has been explained by the relation between the pregnant uterus and the appendix. Clado has shown that there is an intimate relation between lymphatics of the appendix and those of the broad ligament, and Lockwood has reported a case in which the broad ligament was inflamed and swollen during appendicitis.

The diagnosis of appendicitis complicating pregnancy usually should not be more difficult than that of ordinary cases. According to Cabot the blood is normal during the first 6 or 7 months of pregnancy. Leucocytosis during that period with signs in the right iliac fossa would be in favour of the diagnosis of suppuration in that region (see "The Blood in Appendicitis," "REVIEW," p. 22). In the latter months of pregnancy leucocytosis has been described by older writers, but recent data are wanting.

As appendicitis complicating pregnancy is dangerous immediate operation is necessary. The writer recommends the rectus incision, as it is easy to enlarge without cutting muscular fibres and there is little danger of yielding of the cicatrix. Pregnancy does not appear to increase the danger of operation.

AMERICAN MEDICINE, Aug. 30, p. 338.
**Chronic Carbon Monoxide Poisoning
 from Leakage of Illuminating Gas.**

By THOMAS J. YARROW, Jr., M.D.

Chronic poisoning from constant inhalation of illuminating gas frequently occurs and is unrecognised. Gas fittings are seldom perfect. Those exposed to a constant slight leakage

grow accustomed to and cease to notice it. Carbon monoxide forms a stable compound with hæmoglobin, so that blood once impregnated with it loses its power as an oxygen carrier. The compound is of a bright florid crimson or purplish-red colour, unlike the colour of normal blood, which is more of a yellowish-red hue. Persons acutely poisoned with carbon monoxide show this peculiar colour in their complexions. Carbonyl hæmoglobin exhibits characteristic absorption bands with the spectroscope.

When a person is exposed constantly to a leaky gaspipe, the effect upon the health is soon apparent. The symptoms are anæmia, with or without leucocytosis (which may or may not be accompanied by a polymorphonuclear increase), frontal headache (worse in the morning on arising), anorexia, tinnitus aurium, vertigo, foul taste in the mouth (sometimes termed "gassy"), abdominal pains, constipation, indigestion, weakness and lassitude. The patient never feels well, although he is much improved when in the fresh air—a fact which should excite suspicion. Chronic poisoning differs from acute in that the florid countenance is seldom or never seen.

To examine the blood or urine for carbonyl hæmoglobin the finger or ear is pricked, some drops of blood are drawn into a pipette and diluted with 5 to 10 c.c. of distilled water, and examined with the spectroscope. The absorption bands are noted, and their position mapped by means of wave-length scale, with a sodium flame to mark the position of the D line. Stokes' reagent or ammonium sulphide is added and the mixture is thoroughly stirred with a platinum loop and slightly warmed, to favour rapid reduction. If carbonyl hæmoglobin is present the normal reduction does not take place, but the alpha and beta bands of carbonyl hæmoglobin persist. They

are somewhat closer to the violet than those of oxyhæmoglobin.

It is important to detect carbon monoxide in the atmosphere of a house, when the quantity is so small as not to be detected by the odour of gas. The excellent method of Vogel may be used. Fresh normal blood is added to distilled water until the latter is tinged faintly red, and about 3 to 5 cm. are placed in a flask of the capacity of 100 to 150 cm. The flask is then shaken for several minutes in the suspected atmosphere. If carbon monoxide is present the diluted blood will assume a bright rose-red tint. On adding ammonium sulphide and making a spectroscopic examination, the two bands of oxyhæmoglobin will be replaced by the band of reduced hæmoglobin, but the two bands of carbonyl hæmoglobin will persist unchanged.

CASE 1.—A man, aged 52, who had not felt well for some years complained of anorexia, nausea, frontal headache, rapid pulse, colicky pains, indigestion, and obstinate constipation. He had been confined to his bed for several days. Struck by the odour of illuminating gas when he entered the vestibule of the house the writer made a spectroscopic examination of the blood and found carbonyl hæmoglobin. It was also present in the blood of a sister of the patient, but was absent from the blood of the other members of the family. The rooms of the patient and his sister were badly ventilated, especially at night. The other members of the family slept in well-ventilated rooms. The blood contained 3,700,000 erythrocytes per c. mm. and moderate leucocytosis was present. The patient was removed to the suburbs, and immediately improved. One month later the blood was normal.

The following case appears to be the first reported of carbonyl hæmoglobinuria from chronic carbon monoxide poisoning:—

CASE 2.—A woman, aged 58, with marked tremor of the lower jaw, was admitted to hospital. Gas had been escaping in her house for a long time. She could always detect the odour until 4 or 5 months ago, but not since. The urine was crimson and contained carbonyl hæmoglobin. The blood also contained it. Recovery followed.

LA PRESSE MÉD., Aug., p. 783.

Raynaud's Disease in unusual Situations.

By MM. DECLoux, RIBADEAU-DUMAS, AND SABARÉANU.

Raynaud's disease rarely affects the face. The writers have seen two cases in which the nose was affected.

CASE 1.—A house-painter, aged 41, not addicted to alcohol, had his ears "frost-bitten" in 1891. In July, 1892, while the weather was quite warm, the ears were affected in the same way. The external ear was covered by little pimples which rapidly became capped with a blackish crust. These left a whitish scar, the marks of which were particularly evident at the level of the mastoid process. For ten years he was regularly attacked at intervals by these "frost-bitten" ears. The condition lasted 3 or 4 months, and then subsided with or without passing through a "crusted" stage.

On March 27, 1902, the ears smarted acutely, and next day the nose smarted. Two days later large dark blue areas were visible on the nose and ears. The edge of the left ear was swollen and red, and along it were blackish spots which extended from the upper part of the helix to the convexity of the concha. At the edge of the affected part were little crateriform ulcers, surrounded by yellowish crusts. The right ear was more severely affected. In



both parotid regions swollen glands could be felt. Over both mastoids was a series of little, white, elastic scars, not depressed—the remains of the previous eruptions. The nose showed a blackish area extending from the middle of the nasal bone almost to the junction of the nose with the upper lip. Laterally the disease extended almost to the cheek. The affected area was bordered by a series of vesicles, outside of which was an erythematous zone (Figs.). The diseased parts were painless. All over the face sensation was unimpaired, but over the affected parts it was slightly diminished. The general condition was good. There was a faint blue line on the gums. The heart was normal. There was slight albuminuria. After admission to hospital there was violent itching of the face, and little erythematous papules appeared on the cheeks and forehead, which soon became capped by a blackish crust—localised patches of gangrene. These patches gradually dried up and separated, leaving a condition suggesting sclerodermia. The albuminuria dis-

appeared, and the permeability of the kidneys to methylene blue was normal.

CASE 2.—A female rag-picker, aged 65, came to hospital on Nov. 11, 1901. She was very poor, and addicted to drink. For a year she had had a cough and had been losing flesh. Over the lower half of the nose was a dark blue patch which extended to both alæ, and stopped just at the entrance of the nostrils. In the most prominent part of each cheek was also a discoloured patch of the size of a 5-franc piece. In this area could be felt three hard little nodules, which were situated in the skin and were very black. The areas were well margined, and were surrounded by a reddish line which insensibly faded into the healthy skin. The affected parts felt numb. On the lower half of the forearm, and on the back of the left hand there was a hard and very painful œdema. The thumb and index finger of the right hand were pale, and along the right border of the thumb-nail stretched a dark blue line. There was a similar œdema in the lower limbs. The pulp of the little toe on the left foot showed a

blackish spot, which stood out against the livid colour of the rest of the toe. In these regions there were formication and shooting pains which prevented sleep. The superficial veins of the leg were varicose. There were extensive bronchitis and a cavity at the apex of each lung. The heart was normal, and the pulsation could be felt at the wrist and in the feet. The urine was normal. By May 28 the patches on the cheek had completely disappeared. The right ala of the nose was free, but on the left was a dry slough, which was gradually separating and taking with it a small portion of the free border of the left nostril. There were similar hard and dry sloughs on the right thumb and on the left little toe. The œdema of the toes had disappeared. On June 16 the slough had separated from the nose. Cicatrisation was taking place, and there was progressive contraction of the skin. The separation on the thumb was slower. The nail had ceased to grow at the beginning of the illness. On the little toe the slough had taken with it the end of the nail.

The writers regard these two cases as typical examples of Raynaud's disease in unusual situations. Raynaud himself saw the disease at the end of the nose in only one case; other observers have occasionally found it there. In the second case the extremities (the most frequent to suffer) were affected, but as in a case published by d'Ostros, the nose also was attacked. The first patient had suffered from plumbism, and when seen had a faint blue line on the gums. Hitzig has shown the influence of lead on the contraction of the small vessels and capillaries. The second patient was tuberculous. It is well known that certain manifestations of tuberculosis, *e.g.*, lupus erythematosus, are accompanied by local cyanosis. But in addition

the woman was an alcoholic. Thus both patients were suffering from an intoxication, which acted as a predisposing cause. Probably the exciting cause was intense cold.

NEW YORK MED. JOUR., Sept. 6, p. 401.

Post-Operative Crural Thrombosis.

By BENJAMIN R. SCHENK, M.D.

Thrombosis of the crural veins following operations has been recognised for many years, yet little has been written on the subject. The thrombosis occurs late in convalescence when all danger is supposed to be passed. The writer, who is resident gynæcologist in the Johns Hopkins Hospital, finds that in the 13 years during which the gynæcological department has existed 48 cases of post-operative thrombosis occurred in 7,130 patients who underwent operation. The operations after which the thrombosis occurred were as follows: perineal, 4; hystero-myomectomy and myomectomy, 19; removal of ovarian cysts, 9; hysterectomy for cancer, 5; suspension of the uterus, 3; suspension of the uterus with repair of the perineum, 4; hysterectomy for pelvic inflammatory disease, 1; miscellaneous, 3. A remarkable fact is the high percentage of cases (58) which occurred after the removal of large tumours. Anæmia seems to have been a factor, for in 11 cases the amount of hæmoglobin in the blood varied from 20 to 50 per cent. The right leg alone was infrequently affected compared with the left, which is exposed to the pressure of the rectum. Venous thrombosis is much more common after pelvic than other operations, probably because of the injury to large veins. After ligation of a pelvic vein a clot forms and extends as far as the first branch and probably projects into the lumen. Clots may

also form after injury to the veins, such as from the pressure of retractors.

The patients were doing well, when suddenly pain in the left thigh or leg was complained of and was accompanied by pyrexia. The earliest case occurred on the sixth and the latest on the twenty-second day after the operation. In 25 cases the onset occurred between the twelfth and the sixteenth day; in all but 4 cases after the tenth day. There were dull, throbbing pain in the thigh, calf, or popliteal space, and tenderness along the enlarged veins. Tender enlarged glands were present in only 6 cases and the veins were distinctly palpable in only 5. Œdema sufficient to cause pitting was found in 38 per cent. of the cases and albuminuria in 41 per cent. Pulmonary embolism occurred in 2 cases:—

Case 1 has been previously described in the "REVIEW" (See "Embolic Pleurisy after Operation," p. 592, Case 2).

CASE 2.—A woman, aged 42, 15 days after double oophorectomy for inflammatory trouble, complained of pain in the left thigh and leg. Swelling and tenderness soon developed. On the thirty-fourth day she was seized with intense pain in the left lower abdomen, and despite free action of the bowels there was marked abdominal distention. This distention continued for several days and was accompanied by paroxysms of intestinal pain. After 13 days the abdomen was opened. Four days after this second operation she became unconscious and cyanotic, with gasping respirations, while the pulse was fairly good. Examination of the lungs was negative. After half an hour consciousness was regained and the general condition was good. The swelling of the legs persisted at the time of her discharge from the hospital, 35 days later.

The treatment of post-operative thrombosis in the Johns Hopkins Hospital consists in

keeping the patient in bed with the affected limb elevated. It is sometimes covered with compresses of lead and opium or with simple cold applications, sometimes it is wrapped in cotton. The elevated position is maintained for at least 5 weeks. When patients were allowed to walk before this time there were swelling and pain on allowing the legs to be dependent, but not after treatment for the full time.

CENTRALBL. F. GYN., Aug. 2, p. 817.
**The Illumination of the Abdominal Cavity
 (Ventreoscopy) in Vaginal Cœliotomy.**

By D. VON OTT.

Vaginal cœliotomy has reduced the number of cases of laparotomy in the writer's practice by one half. It is a less dangerous and more conservative operation than laparotomy. A great disadvantage is the impossibility of keeping the whole field of operation under visual control; so that in the event of hæmorrhage secondary laparotomy may be necessary. The two factors concerned are (1) the small amount of light which penetrates the opening made in colpotomy or vaginal hysterectomy, and (2) the obscuration of the parts by coils of intestine (Fig. 1). The second objection is removed by substituting Trendelenburg's for the ordinary lithotomy position as soon as an uninterrupted view of the parts is desired. The intestines sink *en masse* against the diaphragm, especially if anæsthesia is deep, and the only desideratum then is good illumination (Fig. 2). This is obtained (1) by employing an electric lamp and reflector on the forehead, (2) by introducing through a speculum a small electric lamp on a handle bent at right angles, and holding it near the

parts to be illuminated, or, what is best if intra-abdominal manipulations are required as well as inspection, (3) by retracting the upper edge of the colpotomy wound by a deeply grooved speculum containing an electric lamp with a reflector and a contrivance by which too high temperatures are avoided (Fig. 2). Being within the groove the lamp does not dazzle the operator's eyes. If it is desired to illuminate the whole abdominal cavity the anterior abdominal wall should be elevated by volsella forceps applied near the umbilicus (Fig. 2). The abdominal cavity, the crests of the iliac bones, the promontory of the sacrum, and the broad ligaments are clearly visible, and in most cases also the cæcum, vermiform appendix, transverse colon, stomach, part of the liver, gall-bladder, and spleen. The

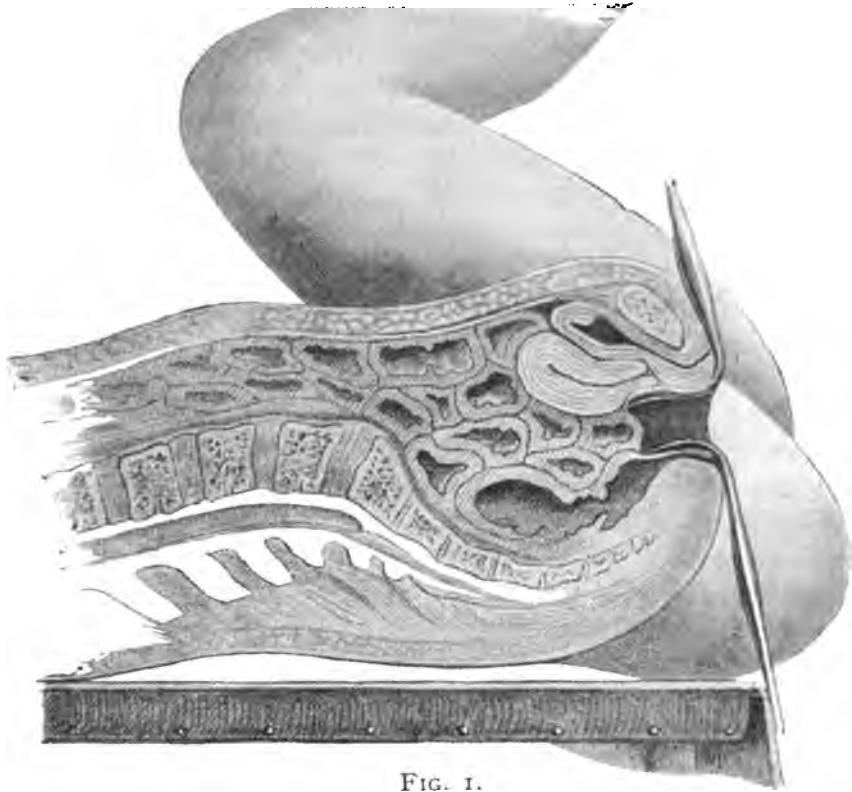


FIG. 1.

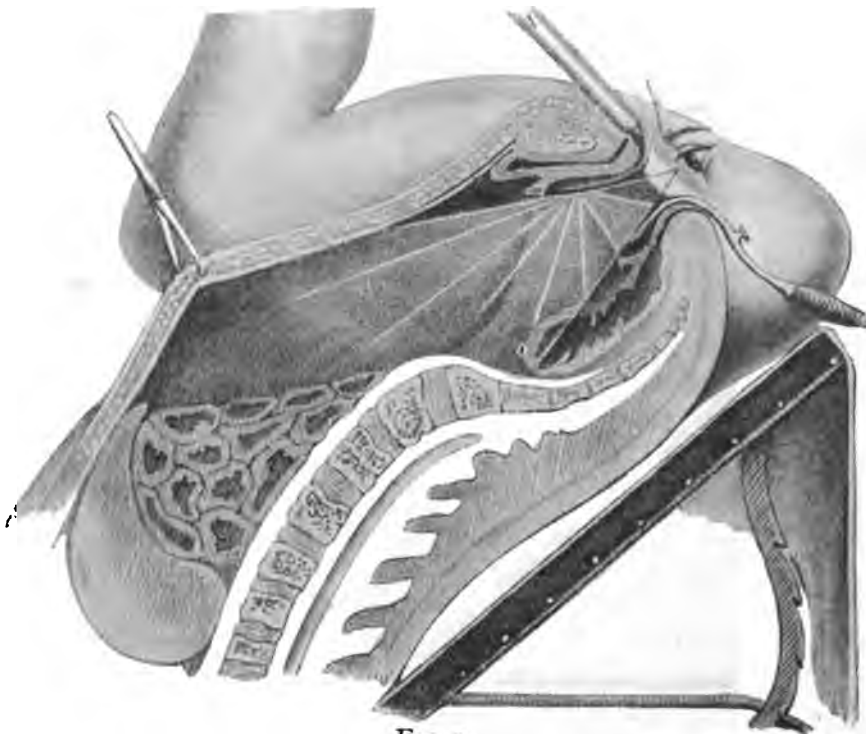


FIG. 2.

FIG. 3.



FIG. 4.



peritoneal lining of the anterior abdominal wall is visible beyond the umbilicus, and the round ligaments and posterior wall of the bladder are clearly defined. Before placing the patient in Trendelenburg's posture the colpotomy wound should be plugged with a pad of sterile cotton wool wrapped in a layer of gauze. This filters the air which necessarily enters the peritoneal cavity when the intestines fall on to the diaphragm, and prevents the introduction of germs.

The writer has also employed this method of illumination successfully in operations on the bladder and rectum. In the former the whole internal surface is visible, in the latter the mucous membrane as far as and even beyond the sigmoid flexure.

Fig. 3 shows the appearance of the peritoneal cavity, when illuminated after the removal of the uterus and the left adnexa. The cæcum, vermiform appendix, intestines, and edge of the liver are visible. The lamp is in the grooved retractor above. In Fig. 4, posterior colpotomy has been performed for the separation of adhesions of the uterus and appendages.

GAZETTE HEBDOMADAIRE DE MÉDECINE ET
DE CHIRURGIE, Sept. 21, p. 889,

Simple Family Cholæmia.

By A. GILBERT and P. LEREBoullet.

Simple hereditary cholæmia is the most important disease of the liver, though it is not mentioned in the text-books.

ETIOLOGY.—The disease is very common, and is found more in private than in hospital practice. It is particularly common in Eastern races and Jews. Usually the parents or the collateral relations of the patient suffer from it. It usually dates from birth, or from a

remote period of the patient's life. Its immediate causes generally are obscure. Sometimes great fatigue, emotional disturbance, or some illness precedes the cholæmia. There is a close connection between family cholæmia and transient or chronic jaundice, jaundice with splenic enlargement, biliary cirrhosis, and other diseases of that class.

SYMPTOMATOLOGY.—The condition is often compatible with apparent health, and constitutes a diathesis rather than a disease. In other cases it gives rise to a series of important secondary symptoms—digestive disturbances, neurasthenia, hæmorrhages, etc.—which dominate the clinical picture, and are wrongly regarded as primary phenomena. The primary symptoms (more directly dependent upon the malady) are as follows:—

I. THE SKIN.—There may be (1) xanthoderma, (2) melanoderma, or (3) xanthelasma.

Xanthoderma.—Most frequently there is slight and transient jaundice without discolouration of the conjunctiva. The skin may be yellowish, greenish, olive-coloured, or simply of a dull colourless hue which does not alter under the influence of emotion. As a rule the face is chiefly affected. The patients may be mistaken for Creoles or Asiatics. When the colour is neither yellowish nor greenish, but simply dull, the condition may be mistaken for anæmia, but the redness of the lips and the conjunctiva should prevent this error. The jaundice may be confined to certain regions of the face, e.g., the forehead, the neighbourhood of the lips, the naso-labial furrows, the palms and soles. The face, a hand and a foot, or the face and a hand and foot may be alone affected. But this partial pigmentation is exceptional.

Melanoderma results from transformation in the skin of biliary pigments into melanin.

It occurs as: (1) moles, which most frequently are on the face; (2) freckles; (3) scattered hepatic stains, which may be smaller or larger than freckles, and often have a yellowish or pigmented background; (4) a black ring round the eyes; (5) "the biliary mask" (large pigmented areas varying in colour from a dirty yellow to dark brown on the temples and forehead). This facies also occurs in pregnancy and is dependent upon cholæmia; (6) a greyish or earthy complexion which sometimes takes a melanodermic hue and, if general, may suggest Addison's disease; (7) deep pigmentation of the back of the hands, the palms remaining pale. (This is often associated with the melanodermic facies).

Xanthelasma of the eyelids is often associated with xanthoderma and melanoderma. It is rarer than either, and is not so important; but when it occurs cholæmia should be suspected. Xanthoderma, melanoderma, and xanthelasma of the eyelids occurring together constitute a triad of pathognomonic symptoms.

THE URINE.—Bile-pigment is usually absent. In some cases however Hay's reaction for bile acids is given. Bile pigment is sometimes present in urine secreted during digestion and transiently at other times. Urobilin and hydrobilirubin which result from the destruction of bile pigments in the kidneys are frequently found. Of 50 cases of family cholæmia the writers found urobilin in large quantity in half the cases, and in traces in 20.

LIVER AND SPLEEN.—Often these organs are normal. Sometimes the liver projects a few cm. below the costal margin. The hypertrophy is usually regular, but may be partial, involving chiefly one lobe. Rarely, it is accompanied by slight induration. Sometimes the spleen alone is hypertrophied, and

projects below the costal margin. Sometimes both spleen and liver are hypertrophied. Irregularities in the liver and the spleen can be made out only in a few cases.

CHOLÆMIA.—Examination of the blood-serum is not necessary for diagnosis, but it shows the degree of cholæmia. Spectroscopic examination is insufficient. Gmelin's test almost always gives a positive reaction. A milk diet or intercurrent diseases, *e.g.*, tuberculosis, may cause cholæmia to disappear.

(II.). The secondary symptoms frequently dominate the clinical picture. They may be classified as follows:—

(1). **CUTANEOUS SYMPTOMS.**—The commonest is a sensibility of the skin to cold, giving rise to "goose skin." Intense and obstinate pruritus may be the chief symptom. Certain forms of prurigo, *e.g.*, the prurigo of Hebra, may be due to cholæmia. The writers believe that urticaria depends almost invariably upon cholæmia, which they regard as a necessary predisposing cause. Melanoderma set up by dermatoses, phthiriasis, or medicaments, they believe to be influenced by previous cholæmia.

(2). **GASTRO-INTESTINAL SYMPTOMS.**—In some cases dyspeptic symptoms dominate the picture. Hyperpeptic indigestion is very common. Frequently there are violent and even intolerable pain in the stomach after meals, which is temporarily stilled by ingestion of food. This pain may coexist with good appetite and even with crises of boulimia. In some cases hyperpepsia is shown by an increase of appetite which may amount to voracity. Other gastric symptoms may be observed, such as copious hæmatemesis of venous blood, which, coexisting with the pain of hyperpeptic dyspepsia suggests gastric ulcer. Sometimes there are biliary "flushes," which

are often periodic, and may be preceded by megrim. Sometimes they are accompanied by fever. Of intestinal symptoms mucomembranous enteritis associated with hyperpeptic dyspepsia is common. Constipation is often associated with the enteritis and is the commonest symptom. Sometimes there are repeated attacks of diarrhoea. Hæmorrhoids are common. Appendicular crises, suggesting appendicitis frequently occur.

(c.) NERVOUS SYMPTOMS.—The persons affected may be quick, active, impatient and irritable, or apathetic and somnolent. They all have a tendency to melancholy and hypochondriasis. Many of them become neurasthenic, and are subject to intermittent or continuous melancholia. In marked cases of cholæmia there is sometimes sexual impotence. Drowsiness after food is frequent, and may be associated with obstinate insomnia. Megrim and headaches are frequent. Hysteria often occurs.

(d.) RENAL SYMPTOMS.—There may be intermittent albuminuria. Sometimes there is slight but constant albuminuria, which at times may greatly increase. Sometimes paroxysmal hæmoglobinuria occurs.

(e.) ARTICULAR SYMPTOMS.—Rheumatic pains are frequent. They may be general and suggest rheumatic fever, or subacute, or chronic pains in the joints or muscles may develop at the close of the day under the influence of cold and fatigue. Possibly chronic biliary infection play a part in the production of chronic rheumatism.

(f.) HÆMORRHAGES.—There is a special tendency to hæmorrhages. Epistaxis in youth, is a symptom of cholæmia, and it may continue in adult life. Bleeding from the gums, menorrhagia, "false hæmoptysis," gastro-intestinal hæmorrhages, and purpura may also occur. There is also a true hæmor-

rhagic form of family cholæmia, which covers most cases hitherto known as hæmophilic. Cholæmia may impart a hæmorrhagic character to intercurrent diseases, *e.g.*, phthisis, pneumonia, etc.

(g.) CARDIO-VASCULAR SYMPTOMS.—There are systolic musical functional murmurs. Sometimes there are organic murmurs, which may be due to chronic endocarditis of biliary origin. There is sometimes bradycardia

(h.) THE TEMPERATURE.—The temperature is often normal; but it may be febrile, with considerable oscillations, and the evening temperature may be more than one degree higher than the morning. Sometimes there is high fever ushered in by rigors and followed by fits of perspiration. This condition suggests an attack of malarial fever.

3. HISTORY.—As a rule the patient had icterus neonatorum; he may have had emotional or catarrhal icterus or icterus due to gall-stones which passed off, leaving the symptoms of family cholæmia. In his ancestors or immediate relations the same manifestations are found. In complexion all the members of the family are alike, and an examination of the blood-serum of the family usually shows the constant existence of cholæmia. The writers believe that Napoleon I. was a marked example of family cholæmia.

TREATMENT. — Calomel, salicylates, and quinine may be used. When there is dyspepsia the writers give salicylate of methyl and hypodermic injections of quinine. To reduce the cholæmia they insist on the use of skim milk, or of thin kephyr, and recommend also thyroid feeding which has given good results in the pruritus of jaundice as well as in urticaria. For the functional disturbances in the liver they give hepatic and pancreatic substance,

extract of bile, bicarbonate of soda, arsenic, Vichy, Vals, Carlsbad, or Bourbule water. These remedies have a complex effect; most of them modify the cholæmia. To relieve portal congestion they employ purgatives, warm baths, abdominal massage, and massage of the liver.

LANCET, Oct. 4, p. 929.

Myelopathic Albumosuria.

By T. R. BRADSHAW, B.A., M.D., M.R.C.P.

The writer describes a new disease which he terms "myelopathic albumosuria." Cases of softening of the bone in adults may be divided into 2 groups. In one group the patients are young and mostly women, recovery temporary or permanent is not infrequent, and the essential lesion is the absorption of lime salts and replacement of the bony structure by a simpler type of connective tissue. In the other group the patients are generally men in the second half of life, recovery does not take place, and the essential lesion is invasion of the bone by cellular growths of the connective-tissue type, either generally diffused throughout the bone or forming circumscribed tumours and leading to the absorption of the osseous structure. To the former state the name "osteomalacia" is given, to the latter "multiple myeloma"—a term introduced by von Rustitzky in 1873. About 12 years later the urine in a case of multiple myeloma was found to contain a peculiar body chemically allied to albumin and known as Bence Jones' albumose. Finally, it was found that albumosuria was not present in all cases of multiple myeloma, and that, although in all the fatal cases of albumosuria which were examined, some extensive lesion of the marrow and

generally of the bones was found, its nature varied. The cases of albumose in the urine with some affection of the marrow seem to form a group by themselves, and to them the writer applies the term "myelopathic albumosuria."

ETIOLOGY.—Of the causation all that is known is that the disease occurs in the second half of life, and more frequently in males than females. In the youngest recorded case the patient's age was 36, and in the oldest 71. Of 18 patients 14 were between 35 and 55, being fairly evenly distributed over the intervening period. Of 20 patients 15 were males and 5 were females. One patient had a gumma in the tongue, and another was stated to have had syphilis in early life.

ANATOMY.—The changes in the skeleton consist in an invasion of certain bones by a soft mass of new growth, the proper osseous tissue undergoing absorption. The growth may be confined to the interior of the bone, being limited by the compact tissue, or it may burst through the latter and form tumours of considerable size in the adjacent structures. The ribs, sternum, and vertebral bodies seem to be affected always, the pelvis and skull less frequently, the long bones of the limbs seldom. The new growth is gelatinous, soft, and vascular, and has a general resemblance to red marrow. It is composed chiefly of round cells, with little or no intercellular substance. Fat globules are often present in the cells and occasionally cells of a higher type occur; thus, spindle-cells may be noticed here and there. In structure and clinically the growth seems to be closely allied to sarcoma, but it differs from the common forms of sarcoma in its invasion of several parts of the skeleton simultaneously and its showing no tendency to form metastases in other parts. The condition of the urine is pathognomic;

it contains a proteid closely resembling albumin but differing in that (1) it coagulates at a remarkably low temperature—viz., 58°C; (2) the coagulum is to a great extent dissolved at the boiling point and reappears on cooling; (3) the coagulum which forms on adding cold nitric acid also dissolves on boiling and returns on cooling; and (4) the proteid is readily coagulated by hydrochloric acid.

SYMPTOMS.—The onset is insidious. The earliest symptoms usually are pains in the back and sides, suggesting rheumatism and neuralgia, with progressive anæmia and weakness. The pains generally are severe; they are aggravated by movement and are accompanied by local tenderness. They vary in position and intensity from day to day and from week to week. Sometimes relief is so great and prolonged that it is mistaken for real improvement. Examination of the bones yields varying results. In the writer's first case no enlargement or tumour was felt, but the spine was fixed and bent, while the ribs seemed to have lost their natural rigidity, so that the chest seemed to yield under the pressure of the hand or of the stethoscope, and irregularities suggesting fractures could be felt by the finger. In the other 2 cases which he has seen distinct tumours were found on the bones. One patient had a semi-fluctuating swelling of the size of a large hen's egg on one of the ribs, and the X rays showed a breach of continuity of the bone. The only tender spot was on one of the ribs over the præcordium. Anæmia and lassitude are profound towards the close.

PROGNOSIS.—The course is from bad to worse, though often not uniformly so. Life is rarely prolonged for a year after the symptoms are sufficiently pronounced to lead the patient to seek advice. The prognosis is much the same as in malignant

disease. Death may be due to exhaustion or to some intercurrent disorder, of which pneumonia seems to be not infrequent. In one case albumose was present in the pneumonic sputum.

PATHOLOGY.—The proteid in the urine is distinct from all other known proteids. It seems to be intermediate between the native albumins and the proto-albumoses. Abundant crystals of it may be obtained by a method analogous to that by which crystals of albumin can be obtained from the serum of the horse. Probably it is produced by some abnormal metabolism in connection with the growths in the bones.

See also the following article, and "REVIEW," Vol. II., pp. 215 and 218.

ZEITSCH. F. KLIN. MED., Bd. 46, Hft. 5 and 6, p. 445.

Multiple Myelomata with Albumosuria.

By G. JOCHMANN and O. SCHUMM.

A woman, aged 37, was admitted to hospital on Sept. 11, 1900. The hips had become painful about Christmas, 1899, and standing and walking soon became difficult. Stout corsets or any support by which the weight of the trunk was taken off the hips gave relief. In Jan., 1900, she was treated for nephritis. Lumbar pain appeared, sitting became impossible unless the body was supported by the hands, and there was rapid emaciation. She had previously been healthy and had had 2 children. Menstruation ceased in Jan., 1900.

The skin was pale and yellowish. Over the sacrum was intense pain which was aggravated if she was lifted into a sitting posture. There was tenderness over the whole of the thorax, especially over the sternum.

Tapping the head caused pain in the lumbar spine. There were some hæmorrhages in the right retina. The respirations were 30 and superficial. There were universal crepitations, and bronchial breathing with diminished resonance at both bases posteriorly. The apex beat was a finger-breadth outside the nipple line; the cardiac sounds were normal, the beats 120. The urine was acid and of s.g. 1015. 1200 c.c. were passed daily. It contained hyaline and granular casts, a few leucocytes, and 3 per mille of albumin (Esbach). Ten days after admission a tender swelling appeared over the sternum between the second and fourth ribs. Tuberculous caries of the sternum and lumbar vertebræ was suspected, but no reaction followed injection of tuberculin. Multiple malignant tumours of the sternum and vertebræ complicated by nephritis were then diagnosed. During the next few months the sternal swelling steadily enlarged, and the whole bone became more prominent, while the ribs became kinked and depressed. The head fell forward until the chin rested on the sternum, and a sharp kyphosis appeared with its apex at the third dorsal vertebra. The spinous processes were also abnormally prominent in the lumbar region. The woman became visibly shorter. The temperature varied between 98·6° and 100·4°. These changes suggested osteomalacia—a view which was supported by the discovery of disease in the pelvis and lower limbs. The pelvic bones were soft, and on pressure “parchment-crackling” was obtained especially over the anterior superior spine of the ilium. A radiograph revealed an unsuspected fracture of the neck of each femur, the shaft and trochanter being elevated and rotated outwards. In addition the structure of the ilium and femur was altered so that in places no dark shadow

was obtained. This was afterwards found to be due to absorption of the compact and spongy tissue and the substitution of a soft cellular substance. The left trochanter was $3\frac{1}{2}$ in. above Nélaton's line and the right $\frac{1}{2}$ in. The pelvic measurements were normal. Osteomalacia was diagnosed. The absence of pelvic deformity did not negative it, as the patient was bed-ridden. The blood-changes were those of anæmia, the hæmoglobin being only 50 per cent. The white corpuscles were not in excess but there were some nucleated red cells. Early in April, 1901, hæmorrhagic glaucoma of the left eye appeared. Emaciation, kyphosis, and asthenia progressed and on May 19, 1901, death occurred from right apical pneumonia. During the last few weeks, in addition to albumin (0·74 per cent.), albumose (0·35 per cent.) was constantly present in the urine.

NECROPSY.—The upper part of the sternum was depressed and the lower prominent, so that on sagittal section the bone was S-shaped. The cancellous tissue had been absorbed and replaced by a soft raspberry-jelly-like pulpy material. The sternum and ribs were remarkably soft and were easily cut with scissors. On either side of the sternum, about $\frac{1}{2}$ in. external to the junction of the ribs and costal cartilages, was a deep depression due to multiple fracture of the ribs, the spongy tissue of which was also converted into red pulp. The sharp resulting angles pointed to the pleura, but had not wounded it. There were about 10 oz. of serous fluid in the pleural cavity and signs of croupous pneumonia at the right apex. The heart was flabby. The spleen was normal. There was chronic interstitial nephritis with amyloid degeneration of the kidneys, which were, however, not contracted. The right lobe of the liver was intersected by a deep groove, where the deformed costal arch

compressed it. The bodies of all the vertebræ consisted of red pulp (similar to that in the ribs and sternum), which was bounded above and below by normal intervertebral fibro-cartilages, and laterally either by remains of compact tissue as thin as paper, and often decalcified, or by ligaments. The arches and processes were also abnormally soft. In consequence the vertebræ were compressed, and in places measured less than $\frac{1}{2}$ in. in height. The pelvic bones, especially the ilium, could be cut with scissors, or moulded by the fingers, and the cancellous tissue was replaced by pulp. The head of the femur was soft, and was connected with the remains of the neck by a fibrous band. The compact cortex of the femur was at the great trochanters reduced to the thickness of paper, and there were only traces of cancellous tissue in the head and great trochanter. The same red gelatinous raspberry-like substance was present, but in places yellowish-grey areas contrasted sharply with it. The tibia and fibula appeared normal, but the greater part of the cancellous tissue of the astragalus had disappeared. The compact tissue of the proximal end of the humerus was reduced to the thinness of paper, and the cancellous tissue was replaced by a pulpy substance almost up to the articular cartilage of the head. The distal ends of the humerus, radius, and ulna were normal. At the base of the skull were numerous soft patches of bone enclosing red pulp, but the vertex was normal.

HISTOLOGY.—Sections of the upper third of the femur, the head of the humerus, the ilium, a lumbar vertebra, and the ribs were decalcified and stained. The red pulpy material which filled the dilated medullary canal, and replaced the cancellous tissue consisted of uniformly round cells with clear

protoplasm and deeply stained nucleus, which were mostly arranged in parallel bundles, and closely resembled normal marrow cells. Where any trace of compact tissue was preserved the Haversian canals were dilated. In contact with the medulla were numerous lacunæ in which cells resembling osteoclasts were occasionally present. The cells of the red pulp filled these lacunæ and were evidently actively eroding the bone. Between the rows of cells were capillaries and blood spaces. Fat cells were scattered sparsely. Here and there in the femur were islands of round cells without capillaries. These formed the yellowish-grey areas. This description applied generally to all the diseased bones. The compact substance of the ilium was represented by streaks in which true bone, cartilage-like tissue, and decalcified bone appeared irregularly. The tumour character of the red medullary tissue became evident at one spot in the upper third of the femur, in many places between the remaining streaks of compact tissue in the ilium, and in the vertebræ, where it escaped into and infiltrated the surrounding adipose and muscular tissue. In the tissues near the ilium were long rows of cells unaccompanied by capillaries or fat cells. Otherwise the changes—osteoporosis and decalcification—might have been mistaken for genuine osteomalacia.

The designation "myelomata" was first applied by von Rustitzky, in 1873, to multiple tumours of the bone-marrow. They, like gliomata, were distinguished by their structural resemblance to the tissue in which they arose, and by never giving rise to metastases.

An albumose, which is probably allied to the digestive hetero-albumose, was first found by Bence Jones, in 1847, in the urine of a man who died of a disease diagnosed as *osteomalacia fragilis rubra*. Kühne published a similar

case in 1883. Kahler (*Prager Med. Woch.*, Nos. 4 and 5, 1889, and *Wein Med. Presse*, No. 30, 1889) was the first to recognise albumose in the urine of a man in whom softening of the bones was due to multiple myelomata and not to osteomalacia. He claimed that the cases of Bence Jones and Kühne, which were published at a time when the pathology of bone tumours was little understood, were also due to multiple myelomata. He described these growths as giving rise to paroxysmal attacks of pain in the bones of the trunk, and occasionally to palpable swellings of the outer surfaces of the bones. The bones were extremely tender, and gradually became deformed. Spontaneous fractures of the ribs and vertebræ followed. The bones of the limbs were unaffected. Pressure symptoms and paralysis from the spinal deformity were common. Emaciation was marked. The spleen and lymphatic glands were usually enlarged. These views were generally accepted, so that the combination of multiple myelomata with albumosuria is often known as "Kahler's disease." They were in so far correct that albumose has never been found in osteomalacia, but is almost always present in primary neoplasms of bone. But it is now known that growths which are accompanied by albumosuria are not necessarily myelomata, and that almost any tumour of bone—endothelioma, chondro-sarcoma, and metastatic round-celled sarcoma of the medulla—may produce both the osseous symptoms and the albumosuria. Even in Kahler's case the growth would now be described as an endothelioma rather than a myeloma. Askanazy published a case in which lymphatic leukæmia and lymphoid hyperplasia of the bone-marrow was accompanied by albumosuria. There was also marked osteoporosis, so that a new growth

was perhaps not altogether excluded. The writers' case is the only one in which the bones of the limbs were involved; in all the other published cases the process was limited to the trunk, and this has been considered characteristic. The pelvis is not infrequently involved, but however softened is never deformed as in osteomalacia. Enlargement of lymphatic glands has been observed by no one except Kahler, and of the spleen only by Kahler and Rosin. Secondary anæmia and retinal hæmorrhages are frequent. The duration of the disease varied in the published cases from a few months to 8 years. The kidneys were usually healthy, though occasionally there was nephritis. The temperature is not characteristic; it may be remittent, normal, or subnormal. Jochmann concludes from an analysis of the published cases, of which his is the twentieth, that albumosuria, though it does not accompany every case of multiple tumours of the osseous system, is almost pathognomonic of neoplasm and excludes osteomalacia.

Schumm points out that to demonstrate albumose with certainty in the urine a complicated chemical procedure is required. This is especially true if there is also albuminuria. The results of the biuret reaction are quite inconclusive, as traces of peptone are frequently present in albuminous urine from other causes, such as the presence of peptonising organisms. Albumose begins to be precipitated when the urine is heated to 53° or 55°C., and is partially redissolved on boiling. On cooling the precipitate is increased. This precipitate is not strictly due to coagulation, as, unlike coagulated albumin, it is moderately soluble in cold and readily soluble in boiling water. In febrile and other conditions albumose may be temporarily present in traces. Only albumosuria which is chronic is characteristic of Kahler's disease.

MEDICINE.

Absence of Kernig's Sign in Meningitis.—F. S. Clark, M.D. (*American Jour. of Med. Sciences*, May, p. 783).

CASE 1.—A man, aged 22, had a severe chill with pain in the abdomen and headache. He soon became unconscious, and when admitted to the hospital the day after the onset, the eyes were open and staring, the pupils were dilated, and the right was slightly larger than the left. Both reacted to light and accommodation. There was some rigidity of the muscles of the neck which increased to marked retraction of the head. Photophobia and hyperæsthesia were prominent symptoms. There were herpes labialis and sordes on the teeth. The knee-jerks were normal. Kernig's sign could not be elicited in either leg. Lumbar puncture was performed twice, and a turbid fluid containing pus cells was withdrawn. Microscopic examination of this fluid for bacteria was negative. There was leucocytosis of 15,000, and slight albuminuria with a few hyaline casts. The patient died on the fifth day without regaining consciousness. The necropsy showed venous congestion of the meninges and exudation upon the under surface of the cerebellum and the thoracic portion of the cord. The dura mater was adherent to the skull.

CASE 2.—A man, aged 23, was suddenly seized with vertigo, faintness, and nausea, which lasted about 5 minutes. These attacks recurred at intervals, and he also had attacks of epistaxis. Three weeks later his vision was impaired. He complained of dizziness; the gait was staggering and hesitating; speech was hesitating; there was occasional vomiting; the knee-jerks were increased; and patellar clonus was present on the right side, and ankle clonus on both sides. Kernig's sign was not present. There was no retraction of the head or loss of consciousness, but speech became more and more impaired, and death occurred in the fourth week. The

necropsy showed subacute tuberculous leptomeningitis. The membranes at the base of the brain were very adherent, and were separated with considerable difficulty. A few old calcified tubercles were found in the lung, and the right lobe of the liver showed some old healed tubercles.

CASE 3.—A man, aged 48, became violent and destroyed furniture. There were delirium and continual twitching of the hands and feet. On the fifth day there was marked retraction of the head, but the reflexes were normal. Kernig's sign could not be elicited. Lumbar puncture was performed twice, and the tubercle bacillus was found in the clear fluid withdrawn. Death occurred on the seventh day. At the necropsy miliary tubercles were found in the pia mater, and tuberculosis of the left lung, liver, spleen and kidneys.

Cases 2 and 3 confirm the view that Kernig's sign is often absent in tuberculous meningitis.

See also "REVIEW," Vol. IV., p. 42.

Sclerosis of the Superficial Veins of the Limbs.—M. A. Sougues and Janvier (*Bulletins de la Soc. Méd des Hopitaux*, May 9, p. 438).—A labourer, aged 40, who had not had syphilis but was addicted to alcohol, had incipient bilateral pulmonary tuberculosis. The superficial veins of the lower limbs were symmetrically indurated. The internal saphenous vein could be palpated from the internal malleolus to the groin, and the external saphenous from the ankle to the thigh. These veins were contracted, hard, and uniformly indurated. They rolled under the finger like a cord. Almost all the superficial veins of the arms and forearms were similarly indurated. The veins of the trunk, neck, and head were not affected. The induration appeared

to have come on gradually and the patient was not aware of its existence. It had not caused any appreciable symptoms. The radial arteries were hard, but the temporal arteries were not tortuous. The heart was normal, and the urine did not contain albumin or sugar.

This is a typical example of sclerosis of the superficial veins—a condition of which but few cases have been recorded. M. Letulle, who has studied the pathology in 2 cases, found that the lesions differ from those of chronic phlebitis. The indurated vein is like a contracted artery, its lumen is narrowed and scalloped, and the folds formed by the thickened intima are free from clots. The pathology is obscure, it has been suggested that it is similar to that of arterio-sclerosis.

Cancer of the Transverse Colon in a Young Woman.—Wm. J. Crow, M.B., Ch.B. and R. C. Buist, M.D., M.R.C.P. (*Scottish Med. Jour.*, Aug., p. 417).—A woman, aged 25, was admitted to a maternity ward in her second pregnancy. She was spare and rather pale with sallow skin and dark rings around the eyes. During the pregnancy she had about once a month attacks of colic, with swelling in the epigastrium and diarrhoea, which lasted about a day. Labour was normal. On March 26 the fourth day of the puerperum, there was slight shivering the temperature was 101°, and she complained of abdominal pain. The fundus uteri lay midway between the umbilicus and the pubes, and was firm and not tender. The seat of pain was higher than this. Scybala could be felt in the sigmoid flexure. The transverse colon was full, could be moved up and down from the umbilicus to the xiphisternum, and was slightly tender. The descending colon was also palpable, though to a less extent. Castor oil was given and next day the colon seemed well cleared, but the temperature was 102°. The temperature descended by lysis. She was comfortable until April 1, when she again complained of paroxys-

mal abdominal pain. On April 2 a globular swelling was seen extending from the lower edge of the liver at about the ninth rib downwards and inwards towards the umbilicus. Palpation gave a feeling as if a tense ran from the ninth rib towards the umbilicus, but it could not be definitely isolated. The swelling appeared with each attack of pain, and on its cessation vanished. Similar attacks occurred on the 7th and 15th. After this she remained free from pain, the bowels moved once daily, and on April 22 she was sent to a convalescent home.

On May 1 she returned on account of recurrence of the pain, which was accompanied by sickness, vomiting, and diarrhoea. There was stercoraceous vomiting and the diarrhoea and intermittent abdominal pain continued. The edge of the liver could be felt, and distended coils of small intestine stood out prominently at frequent and regular intervals. The diagram shows the appearance of the intestinal pattern (FIG.). On the 12th the temperature rose to 100·6°. Next day it fell to normal. On the 19th there were a rigor and a temperature of 104°. Laparotomy was performed. From the peritoneal cavity thin purulent fluid with a faecal odour flowed. There was lymph on the intestines, especially in the right iliac fossa. The appendix looked normal. As she was apparently moribund nothing more was done. Death occurred within half an hour.

Necropsy.—The uterus was normal. The intestines were distended to the hepatic flexure, just beyond which was a constriction formed by an annular cancer. Microscopic examination showed a typical cylinder-celled epithelioma with commencing colloid changes at the deeper parts. In the caecum the mucous membrane was ragged and undermined; at the base of the appendix was a minute perforation.

While cancer of other organs is almost unknown in young patients, intestinal cancer has been recorded at the ages of 3, 12, and 17. In this case the main interest lies in the indications as to the site of the obstruction. The

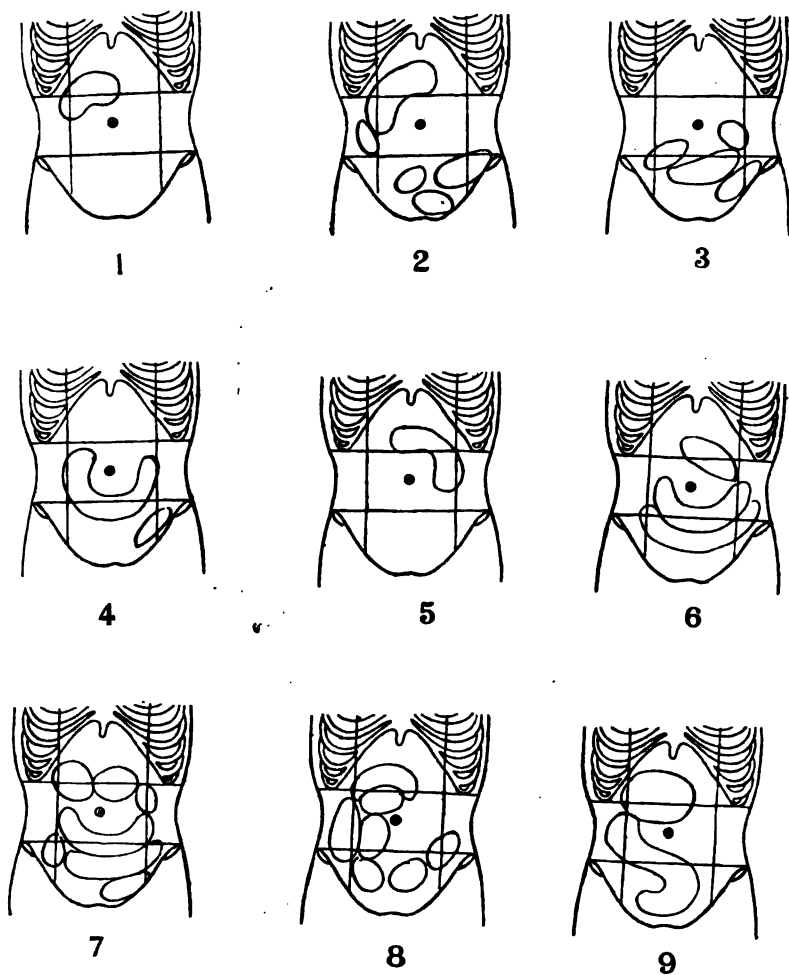


FIG. 1.—A simple and common appearance.

FIGS. 2 to 9.—Series of successive peristaltic patterns taken as rapidly as they could be drawn.

intermissions and apparent absence of urgency prevented early operation. The history may be divided into two periods. In the first there were occasional attacks of pain and transitory swelling in the right side of the epigastrium with signs of distention of the ascending colon and the sensation of a band between the tip of the ninth rib and the umbilicus. In the second with more frequent attacks of epigastric pain and swelling there was marked peristalsis in the small intestine, but signs of distension of the colon could not be made out. The peristaltic waves often showed the successive coils of small bowel as far as the end of the ileum.

Coma in Cancer of the Stomach.—Dr. Osler (*Johns Hopkins Hosp. Bull.*, June, p. 145).—In the later stages of cancer of the stomach mental symptoms are not uncommon. The principal one is slight delirium from the weakness and inanition; rarely there is in addition a remarkable coma resembling that of diabetes.

A man, aged 58, was admitted on Dec. 19, 1901, complaining of vomiting and progressive weakness. He had been a dyspeptic all his life. Early in Sept. the dyspepsia increased with pain in the stomach which was aggravated by taking food. He had lost weight and appetite. Vomiting had recently occurred. He continued at work until 3 weeks before admission.

In the left half of the epigastrium was a nodular thickening which felt like the pylorus. The vomit showed total acidity 30, free hydrochloric acid 10, no lactic acid. A diagnosis could not be made. On Dec. 28, after a few days of improvement, he appeared very dull and drowsy and slept almost the entire day. When aroused he was irrational. On the 29th he was semi-comatose, replied to questions in a confused manner, then sank into a state of lethargy, with his eyes open, but not recognizing his surroundings. The respirations were shallow

and frequently of Cheyne-Stokes character. On the 31st he was so comatose that terminal meningitis of old arterio-sclerosis was suspected. There was commencing optic neuritis with swelling of the discs and oedema of the surrounding retina. Lumbar puncture was performed, and 30 c.c. of clear fluid were ejected with considerable force. The urine was, as a rule, of s.g. 1018 to 1022. About 1500 c.c. were passed. There were a trace of albumin, and many hyaline and finely granular casts, but no sugar. The urea was .028. There was a marked reaction for acetone and diacetic acid. On Jan. 1 the temperature rose to nearly 103°, and death occurred.

NECROPSY.—There was a small carcinoma in the pyloric zone, beginning to ulcerate, but not invading the pyloric ring. The heart was small and rather atrophic, and there was general arteriosclerosis. The kidneys were a little under-sized, red, markedly granular, and cirrhotic. The convolutions were much atrophied, and there was an unusual quantity of cerebro-spinal fluid.

The cause of the coma was undetermined. It may have been a special poison produced by the cancer (which was unlikely), an acid intoxication similar to that of diabetes (which was suggested by the presence of acetone and diacetic acid in the urine), or uræmia.

Simulation of Stricture of the Œsophagus by Atrophic Retraction of the Stomach.—M. Maurice Soupault (*Bulletins de la Soc. Méd. des Hôpitaux*, June 27, p. 641).—The symptoms of atrophic retraction of the stomach may closely simulate those of stricture of the œsophagus—a fact not mentioned by writers on gastric disease. After months or years of gastric symptoms dysphagia begins. First solids, then semi-liquid food, and finally liquid foods are swallowed with difficulty. Food taken slowly and in small quantities may be retained but

when taken rapidly or in moderate quantities it is vomited. Sometimes the vomit contains both the food which has just been swallowed and the residue of food taken previously. The patients do not complain of pain as in stricture of the œsophagus but rather of a feeling of epigastric weight. As a result of the dysphagia they rapidly waste, which confirms the supposition of organic obstruction of the œsophagus. But the largest bougies can be passed. If water is introduced into the stomach by a tube the capacity of the viscus is found to be small, and when the limit is exceeded vomiting is produced and the liquid flows back through the œsophagus and mouth outside the tube. This phenomenon is characteristic. The area of gastric resonance is reduced or cannot be found. In 2 out of 4 cases the writer felt in the upper part of the epigastrium a hard tumefaction—the retracted and thickened stomach. The food vomited does not show the reactions of substances which have been in the stomach some time, for the gastric secretion is suppressed. A greatly reduced stomach from retraction and thickening of its walls was always found. Of 4 cases examined there were infiltrating cancer in 3 and cicatricial sclerosis from corrosive poisoning in 1.

CASE.—A woman, aged 56, entered hospital complaining of dysphagia. For 4 months she had had pains in the stomach which came on immediately after taking food and were sometimes followed by vomiting. After the first month she could not take solid food. After eating she had a sensation of weight at the pit of the stomach; the food was vomited in about half an hour. At first liquids were tolerated but in the end they also were vomited. She rapidly wasted. When she entered hospital she was greatly emaciated and refused all solid food. Liquids were vomited in small quantities. As the appetite was good she constantly made attempts to take food and spent the whole day vomiting. The vomit was of neutral reaction and milk was

returned uncurdled. Stricture of the œsophagus was suspected but a bougie could be passed into the stomach. In the epigastrium tympanitic resonance could not be obtained; a diffuse induration was felt which was attributed to muscular resistance. She became gradually weaker and died after 25 days. The necropsy showed that the stomach was very small and formed a mass at the upper part of the epigastrium; its walls were thickened and sclerosed. There was infiltrating cancer which extended through the whole viscus. The œsophagus was permeable.

Persistent Hereditary Œdema of the Lower Limbs.—H. D. Rolleston, M.D., F.R.C.P. (*Lancet*, Sept. 20).—A brother and a sister have a peculiar form of œdema of the legs, which is permanent as long as they lead an ordinary life and becomes more marked after exercise or a warm bath, but disappears after rest in bed for some days. It is troublesome only from the weight and size of the swollen legs. The mother, aged 45, who has suffered for 35 years from the same condition, has long ceased to trouble about her own legs and is concerned only for her children. There are 5 other children, both older and younger, but they are not subject to œdema. None of the mother's brothers or sisters survived infancy and the condition cannot be traced any further. The œdema is limited to the lower limbs, chiefly to the legs and feet. When the limbs are kept warm the skin is natural in colour, but the circulation is very feeble, pressure leaving an anæmic area for longer than normal. The œdematous skin pits and is cold to the touch. It appears of normal structure; there is no thickening such as is seen in elephantiasis. The absence of any such change in the mother in whom œdema has existed for 35 years is remarkable. There is no puffiness of any other part of the body. No cause for œdema can be found. There is, how-

ever, evidence of "a feeble circulation." At birth they were both "blue children," and they are very subject to chilblains of the feet and hands. When the skin is in this condition it resembles the stage of local asphyxia of Raynaud's disease. The lividity and blueness of the hands are exaggerated, as in erythromelalgia, when they are allowed to hang down, and diminishes when they are elevated. But neither pain nor tenderness is associated with the lividity, thus differing from erythromelalgia.

The girl is 16. Swelling of the legs began 3 years ago and has been constant except when she is confined to bed for a few days. When the legs are bandaged the œdema mounts to the thighs. The following measurements were taken: left calf, maximum circumference, 13½ in.; right calf, 16½ in. A fortnight later, after being in bed most of the time, the maximum circumference of the right calf was 12 in., of the left 11½ in. Blood-pressure at the wrist taken with Barnard's sphygmometer was 125 mm. of mercury—about normal.

The boy is 13. His legs began to swell 3 years ago. The œdema occupies both legs and ascends about half-way up the left thigh. The following measurements were taken: left calf, maximum circumference, 12¾ in.; right calf, 13 in. After rest in bed with the end of the bed raised by blocks, treatment with ergot and digitalis in small doses, and galvanism, as practised by Sir T. Barlow in Raynaud's disease, the maximum circumference of the right calf was 11 in., of the left 11¾ in. The creasing of the skin above the ankles shown in the photograph, taken by the late Mr. Mercer, is due to the pressure of boots. On exposure to cold the extremities become cyanotic; this is exaggerated when the hands are allowed to hang down. The blood-pressure taken with Barnard's sphygmometer when the hands were warm was 95 mm. of mercury—below normal.

Treatment as described above had no effect, only position appeared to influence the œdema.



Shows œdema of the feet, legs, and left thigh, and cyanotic condition of the hands. The creasing of the skin above the ankles was temporary and was due to the pressure of boots. The patient had been up for some hours before the photograph was taken in order to increase the œdema.

These cases differ entirely from angioneurotic œdema and superficially present more resemblance to the œdema of cardiac disease or of chlorosis. But there is no evidence that the œdema can be referred to either of these causes. The cases appear to resemble those of the remarkable family described by Milroy of Omaha in which out of 97 persons in 6 generations 22 (12 males, 7 females, and 3 unknown) had solid œdema of one or both legs without any special

inconvenience or progressive increase in the disease. The condition was congenital except in one case, in which it developed at the age of 12. In only one case did the œdema disappear even temporarily. The disease in some respects resembles both Raynaud's disease and erythromelalgia, but it differs from them in many points. Isolated examples of œdema for which no satisfactory cause can be found come under observation from time to time. Thus the writer has seen a case in a healthy young woman, aged 24, and has heard of a few other cases in women. Œdema of obscure origin is less rare in the new-born and in very young children and may be due to different causes. Some of the cases in which no satisfactory cause is forthcoming may be sporadic examples of the condition described by Milroy.

See also "REVIEW," Vol. IV., p. 99, and Vol. V., pp. 220 and 484.

Post-Typhoid Paralysis of the Ulnar Nerve.—K. Liepelt (*Berlin. Klin. Woch.*, July 7, p. 636).—A man, aged 20, was, on Sept. 5, 1901, admitted to hospital with typhoid fever. There were rose spots and an enlarged spleen. The temperature became normal on Oct. 1. On Oct. 3, while the spleen was still palpable, the right hand and arm became painful. From Oct. 8 to 16 the temperature was raised, but did not exceed 100°. On Oct. 27 the muscles of the hypothenar eminence, the interossei, and the adductor pollicis were much atrophied, and there was an indication of claw-hand in the right ring and little fingers: the first phalanges were extended, while the second and third were flexed, and adduction and abduction of the fingers were impossible. There were pricking and tingling sensations in the skin of the affected parts. Sensibility was normal, except that the tip of the little and the ulnar side of the ring fingers were hyperæsthetic. Farado-cutaneous sensibility was diminished.

Of the muscles supplied by the ulnar nerve only the flexor carpi ulnaris and the ulnar half of the flexor profundus digitorum reacted to faradism; the rest gave the R.D. About 6 months later the muscles of the hypothenar eminence, and the interossei were atrophied, the adductor pollicis had disappeared, and the palm was flattened. Hyperæsthesia persisted, and farado-cutaneous sensibility was absent. The affected muscles did not react to electricity. Thus the paralysis was probably permanent.

Polyneuritis is a recognised sequel of typhoid fever. But peripheral neuritis of single nerves is rare. In 74,205 cases of typhoid fever, which occurred in the German army in 1870 and 1871, there were only 5 cases of ulnar paralysis. Friedländer, in 1901, collected 10 cases. The writer adds 6 more. Of these 16 cases 11 are available for purposes of comparison. Nine of these began during convalescence, and 2 during the pyrexial period. Pain was the first symptom in 8 cases, but was absent in 2. Atrophy was usually present; in 1 case, however, it was absent. Cutaneous sensibility was usually diminished, and the hyperæsthesia present in the writer's case was exceptional. R.D. was present in 5 cases. According to Curschmann the prognosis of post-typhoid neuritis is good. This appears to apply to neuritis of all but the ulnar nerve, of which but 3 cases ended in complete recovery, and 2 showed improvement. Deltoid paralysis is another rare complication of typhoid fever. Kühn and Suckstorff found it once in 97 cases. There was no R.D.

Lead Poisoning in Children.—R. Romme (*Presse Méd.*, Aug. 13, p. 775).—The source of lead poisoning of an infant may be the milk of a nurse who paints her face with cosmetics containing lead, or uses hair dyes. Balland produced lead poisoning in a bitch immediately after the birth of a litter of puppies. For 36 days the puppies received only the mother's

milk. Though born healthy they became anæmic and some developed paraplegic symptoms. Lead was found in their muscles and viscera. Bouchut has reported a case in which an infant acquired lead poisoning from a concentrated solution of acetate of lead applied to cracks in the nipple of the wet nurse. Rousgel points out the difficulty of diagnosis between simple colic with diarrhoea and vomiting, and that caused by the ointment containing lead which is so frequently applied to the breasts of the nurse. Eulenberg examined the vulcanised india-rubber tops of feeding bottles made in Berlin, and found they contained 25% of zinc oxide, and 13½% of lead carbonate. Some bottles have lead tops. Water, wine, cider, beer, seltzer water, vinegar, rum, brandy, orange flower water, and syrups may contain lead. The manufacturers employ litharge to adulterate some of these liquids; others are contaminated by the receptacles in which they are stored. Variot records a case in which the milk for a child was kept all day in a leaden cup. He examined one of the drums given to the children in the hospital and found it contained 12% of lead. Solid food may become impregnated with lead from the receptacles in which it is placed, from soldered vessels, from enamelled pottery (lead being used in the manufacture of it, or present in the ovens in which it is baked), and, above all, from tin-lined saucepans. Bread may be contaminated either by the addition of white lead to the flour, or by the admixture of particles of lead from the mill-stone; or by being baked with wood painted with white lead. Sugar which has been prepared by Scoffern's process, or run into moulds painted with white lead, and butter sweetened by white lead, or coloured with lead chromate are also sources. Lead chromate is frequently used to colour bonbons and cakes. The papers used to wrap sweets and chocolate are often coloured with lead paints. Lead may be absorbed through the skin or inhaled from rooms freshly painted with white lead, from old painted wood used as firewood, from linen,

silk and fabrics containing lead, or from fur, of which the leather is whitened by lead. Variot reports the case of a child who played on a terrace covered by lead sheets. If it rained after a hot day the lead was covered with blue grey powder which was probably carbonate of lead and was loosened by the least movement. In sucking its fingers the child swallowed the powder. Swiss and German doctors have also noticed the influence of the sun which seems to increase the toxicity of children's mailcoats made with white or grey hoods or green varnished linen. Ten gm. of the latter gave on analysis 4.27 gm. of lead. Imitation damask table cloths are frequently loaded with lead, and may contain 330 gm. per sq. metre. Toy paint boxes contain white lead and chromate of lead; lead soldiers and trumpets with lead mouth pieces are also dangerous. Variot found 88% of lead in the latter toy. Toys painted white or orange are frequently loaded with lead. Glazed visiting cards and wafers for closing letters contain white lead, and may be sucked by children. The following articles employed for therapeutic purposes have produced symptoms of poisoning: white lead used to powder excoriations on the thighs, acetate of lead used in solution for a cut or as ointment in chronic granular conjunctivitis, Goulard water used in large quantities on the breasts of the nurse, as well as the other medicaments previously mentioned. Dufour-Labastide has described a case in which a child was accidentally shot by sportsmen, and lead poisoning resulted from the bullets retained in the wound.

Chronic Pulmonary Tuberculosis terminating in Acute Surgical Emphysema.—J. F. Hodgson, M.B., Ch.B. (*Lancet*, July 19, p. 152).—A man, aged 41, had been phthisical for 25 years and presented the usual signs. On the day of death he had excruciating pain in the left shoulder. Only slight emphysematous puffiness on the

left side of the neck could be found. The emphysema was very acute, only $2\frac{1}{2}$ hours elapsing between the appearance of the first symptom and death. The patient, a very thin man, soon became enormously distended. The emphysema was general, the skin all over the body being very tightly stretched.

NECROPSY.—The right lung was fixed to the chest wall in places by old adhesions, and showed old-standing phthisical lesions. The left pleural cavity was obliterated, it being impossible to separate the lung from the chest wall. On attempting to do this a cavity of the size of a pigeon's egg was disclosed at the posterior portion of the apex of the left lung. Projecting into the cavity was a sharp spicule of bone. A portion of the thick cap of pleura covering the apex of the left lung was necrosed opposite to the third left rib. The inflammatory process had spread to the bone and so weakened it that it had snapped about $\frac{1}{2}$ in. from its vertebral end. Slight force must have sufficed for this, as the patient was kept in bed and had but little cough.



A Fatal Case of Lupus Erythematosus.—James H. Sequeira, M.D., M.R.C.P., and F.R.C.S. (*Brit. Med. Jour. of Dermatol.*, Oct., p. 367).—A girl, aged 18, was admitted to hospital early in March, with lupus erythematosus. In addition to the usual eruption on the face there were small spots from $\frac{1}{4}$ to $\frac{1}{2}$ in. in diameter on the upper chest and on the back. There were numerous characteristic spots on the dorsal surfaces of the fingers. The movements of the upper part of the chest on the left

side were impaired, and there was dulness posteriorly. A few moist râles were heard at both bases. Forty-six oz. of smoky urine were passed daily. It contained $\frac{1}{10}$ albumin, blood, and granular and hyaline casts. On March 17 fresh spots appeared on the forehead. On March 20 there were signs of left pleural effusion. On March 28 8 oz. of semi-purulent fluid containing pneumococci were removed. The quantity of urine in 24 hours fell to 12 oz. Fresh spots continued to appear. On March 30 the patient died with severe dyspnoea and pain in the chest.

NECROPSY.—The left pleura contained a quantity of thick creamy lymph. The lower lobe of the left lung was in a state of red hepatization. At the lower extremity of the right

lower lobe was a wedge-shaped infarction, over which there was some recent pleurisy. There was a small calcareous nodule at the left apex, where the pleura was thickened and adherent to the chest wall. There was no active tubercle in the lungs. The right kidney weighed $1\frac{1}{2}$ oz., the left $12\frac{1}{2}$ oz. Both kidneys were in a state of parenchymatous inflammation. The microscope showed acute glomerulo-tubular nephritis, with a slight increase in the connective tissue.

The more severe forms of lupus erythematosus appear to be constantly associated with tuberculosis; in the above case the tuberculosis was obsolete and limited. In 7 out of 27 cases of lupus erythematosus the writer has found albuminuria.

Albuminuria Perforation in Typhoid Fever in Children.—H. Méry (*Presse Méd.*, Aug. 9, p. 759).—A child was admitted to hospital on the sixteenth day of an attack of typhoid fever. The temperature was 101.5° and the general condition good. Next morning the temperature became normal. On the seventeenth day the child awoke suddenly at 8 p.m., sat up in bed, and complained of intense abdominal pain, which was followed by vomiting. The house-surgeon found the child with the *facies abdominalis* and rapid pulse. He applied ice and injected morphine. He diagnosed perforation. Vomiting was repeated during the night. Next morning the writer found the child in great pain, with pale face, sunken eyes, and pinched nose. Percussion caused intense pain, and the abdominal muscles immediately contracted. The pain was diffused over the whole abdomen. There was slight abdominal distension but no area of dullness. Liver dullness was diminished. The pulse was 150 but fairly strong, and the temperature 101.5° . The extremities were warm, and there was no cyanosis. Twenty-one hours after perforation laparotomy was performed. A median incision showed a generalised peritonitis. The abdominal cavity contained pus, false membranes, and faecal

matter. The perforation was found in the small intestine, 4 cm. from the ileo-cæcal valve, and was about the size of a small lentil. Three sutures of fine silk were introduced. The peritoneal cavity was cleansed with tampons of a septic gauze, but was not washed out. The incision was partially closed and drainage secured by counter-openings in the sides of the abdominal wall. After the operation saline solution was freely injected. Next day the temperature was 104.8° , the pulse 150, small, and thready, and there was a little vomiting; 900 gm. of saline solution were injected in the 24 hours. The following day there was improvement, the morning temperature was 100.5° , the evening, normal. Saline solution in full doses was continued. Next day the dressings were removed. There was some pus on the gauze introduced into the median incision, but it was not foetid. In the evening the general condition was good, but the temperature was 101.5° . On the following day the patient's appearance was better, but the temperature was 102.5° in the morning, and 103° in the evening. Next day profuse diarrhoea began, and on the following day there were fine râles at the base of the right lung. These symptoms became worse. The child died 12 days after operation. There was persistent vomiting on the last day.

NECROPSY.—There was peritonitis in the sub-umbilical region. The perforation seemed quite closed and was in the middle of a healing ulcer. A little further from the ilio-cæcal valve was another ulcer. Between the ulceration and the valve was a Peyer's patch, showing several superficial healing ulcers. The upper anterior portions of both lungs showed considerable emphysema, and there were scattered pneumonic patches throughout both lungs, especially large and numerous at the borders of the lower lobes. The bronchi were enlarged, and on pressure abundant pus issued from them. There was congestion, and in some places, hepatisation round them. Death had resulted from peritoneal inflammation and broncho-pneumonia.

In children perforation is fairly frequent in typhoid fever, and it almost always occurs in those above the age of 10. One case has been reported at the age of 11 months. The site of perforation is usually the lower part of the small intestine.

The special form of typhoid fever which attacks the large intestine, and is known as colityphoid also occurs in children. The writer has found ulcerations throughout the large intestine extending nearly to the rectum. Perforation may occur in the lower part of the large intestine, and Hutinel has reported a case at the border of the rectum. Perforation may also occur in the vermiform appendix (See "REVIEW," Vol. II., p. 27) and at Meckel's diverticulum (See "REVIEW," Vol. II., p. 746).

Diagnosis of perforation is not easy. The temperature does not always fall. Sometimes it remains stationary and may rise. When the patient is apyretic the latter usually occurs. The pulse alters rapidly, but it also does so from numerous other causes. Sudden diminution or suppression of urine suggests perforation, as also does disappearance of liver dulness. In cases in which there is stupor there may be no sign of abdominal pain or resistance, no abdominal swelling, and no pain on palpation. Operation for appendicitis has not infrequently been performed in cases which proved to be typhoid. Le Gendre, Parmentier, and Fossard report cases of operation for supposed perforation in typhoid fever, in which suppurative cholecystitis was found. In some cases of hæmorrhagic nephritis there is a temperature curve similar to that of typhoid fever and a uræmic condition with symptoms similar to those of perforation.

A sudden fall of temperature may indicate only collapse and not perforation or hæmorrhage. Uncontrollable vomiting may be due to the condition of the liver. Roger reports two cases of typhoid fever in which the temperature became subnormal with incessant vomiting and diarrhœa, hiccough, and abdominal pain. The pulse remained good and the abdomen flaccid. The

necropsy in both cases showed a high degree of hepatic degeneration. The writer had a case in which a child showed the signs of perforation. No operation was performed, and the necropsy showed neither perforation nor peritonitis, but the liver was pale, and showed great alteration. There was no abdominal rigidity. Uncontrollable vomiting of green colour may occur as an initial symptom in some forms of typhoid fever, but the abdomen remains flaccid, which differentiates the condition from perforation. In doubtful cases examination of the blood may prove useful. In typhoid fever the number of leucocytes is subnormal, if the number rises rapidly from 5,000 or 6,000 to 10,000 or more there are grounds for diagnosing an inflammatory complication, while an addition in the number of polynuclear leucocytes indicates suppuration.

See also "Leucocytosis and Perforation" ("REVIEW," Vol. IV., p. 397).

The Dangers of Dirty Finger-Nails in Children.—Preisich and Schütz (*Berlin. Klin. Woch.*, May 19, p. 446) found tubercle bacilli in the dirt under the nails in 14 out of 66 children (21·2 per cent.) between the ages of 6 months and 2 years. In 5 of the 14 the source of contamination could not be traced. In the remainder one or more relatives were tuberculous. The most dangerous form of tuberculosis appeared to be that in which there was an open wound, as in tuberculosis of the lymphatic glands, bones or joints, for bacilli were invariably found under the nails of children living with such patients. Though but few bacilli are found at a time, the constant reinfection allows constant introduction from the fingers to the mouth. The proof that the organisms found by the writers were true tubercle bacilli rests on morphological and tinctorial evidence alone. Attempts to inoculate animals with the infected dirt failed, possibly because the bacilli were not in sufficient numbers. Pseudo-tubercle bacilli were probably excluded as the

The Danger of Tuberculous "Stools."—Anglade and Chocreaux (*Presse Méd.*, Aug. 16, p. 784).—The writers, who are medical officers in the lunatic asylum at Alençon, have investigated the propagation of tuberculosis among lunatics. The lunatic population of France is 57,424 with an annual mortality of 672.6 from tuberculosis, or 117.11 per 10,000 living—thrice that of the rest of the population. The large mortality is probably due to the fact that lunatics are predisposed to tuberculosis; but predisposition will not produce the disease without the bacillus. The bacillus may spread in asylums through the expectoration of the patients, and in many asylums all sputum is carefully disinfected. But few tuberculous lunatics expectorate at all. The writers believe that the sputum is a negligible factor in the propagation. They think that among lunatics the chief route by which the bacilli leave the body is the alimentary canal. The organisms may find their way into the stools from the lungs by traversing the whole digestive tract, or they proceed from intestinal ulcers, which are very frequent among lunatics, and which are usually the primary foci of the disease. In the first quarter of the year the writers had 6 lunatics and one nurse affected with tuberculosis under observation. Only one of the lunatics expectorated, and that but intermittently. The others all swallowed their sputum. In the stools of each, however often examined, the bacillus was always found. Anglade (*Soc. de Biologie*, July 9, 1901) has pointed out that the bacillus is almost always discoverable in the fæces even of sane tuberculous patients who do not swallow their sputum, and in whom there is no evidence of intestinal tuberculosis. In the stools of the nurse, who did not swallow her sputum, and who had neither diarrhoea nor sign of intestinal ulceration, tubercle bacilli were constantly found. Examination of the sputum led to the conclusion that more bacilli were eliminated by the intestinal than by the air passages. The writers confirmed their observations by studying 5 sane persons believed

to have tuberculosis. In the stools of 4 the bacillus was found. In the fifth examination of the stools was negative; but an injection of 1 c.c. of diluted fæces into a guinea-pig produced general tuberculosis. Three of the patients had the bacilli in their sputum. The writers believe that lunatics discharge the bacilli almost entirely by the stools, as do also children who do not expectorate; and that of tuberculous sane persons who expectorate, a large number, if not all, discharge the bacilli at stool, either because they swallow them, or because they have tuberculous ulceration of the intestines.

To determine the virulence of the bacilli in the stools guinea-pigs were inoculated with $\frac{1}{2}$ c.c. of water that had been brought into contact, but not mixed, with the fæces of tuberculous patients. After 28 or 30 days the animals were killed, and were all found to be tuberculous. Linen was smeared with the fæces of a tuberculous patient and put to dry from Feb. 22 to March 15. During this interval the patient died, and the necropsy showed that the intestinal canal was free from disease. The fæcal dust from the piece of linen was mixed with a large quantity of water, of which $\frac{1}{2}$ c.c. was injected under the skin of a guinea-pig. The animal died of extensive tuberculosis in less than 25 days. Thus, bacilli which have passed along the whole digestive track are virulent on their escape from the bowel, and retain their virulence for many days.

The discovery of tuberculous bacilli in the stools is easy, and this method should be employed as a means of ascertaining whether children with chronic diarrhoea, etc., have tuberculous ulceration of the bowels. The writers smear a thin layer of fæces on a slide, and stain it for the tubercle bacilli as they would sputum. The diagnosis may be controlled by inoculating a guinea-pig. Thus the stools of all tuberculous persons appear to be as infectious as their sputum. In this way everything that may become contaminated by the fæces of the tuberculous—linen, toilet articles, etc.—may become a means

of disseminating the disease. The writers therefore suggest that tuberculous people should be isolated, and that all their excretions should be rigorously disinfected.

Gangrenous Broncho-Pneumonia in Pneumonokoniosis. — G. Rosenthal (*Presse Méd.*, Aug. 30, p. 833).—The division of pulmonary affections into those produced by microbes and those produced by dust seems less certain than was believed. Netter has shown (*Soc. Biol.*, 1897) that dust is frequently charged with pathogenic microbes. Claisse and Josué could not produce true anatomical lesions by experimental inhalations of dust. Rajaonars (*Thèse de Paris*, 1898) states that dust does not act simply as an inert body. Triboulet (*Traité de Brouardel et Gilbert*: "Scléroses du poulmon") believes that pneumonokonioses originate from a mechanical process combined with microbic infection. The part assigned to the latter is steadily increasing, but the association of gangrene has rarely been noted, hence the interest of the following case:—

A copper-turner, aged 50, had worked at his trade for 38 years. At 30 he developed a cough, which returned each winter. Three weeks before coming to hospital he felt "cramped all over." Headache, heavy night sweats, and dyspnoea followed, and he expectorated thick viscous slightly blood-stained sputum. As his symptoms were becoming worse he came to hospital.

He was fairly muscular and vigorous. The temperature was 101° and the pulse 110. There was considerable dyspnoea, and the lips were slightly cyanosed. There was marked convexity of the anterior aspect of the chest in the mammary region, and hollows on either side. There was violent cough, and the expectoration was thick, green, blood-stained, and very foetid. When placed in a conical glass it formed the three characteristic layers. Examination lead to the following diagnosis—(1) a spot of gangrene in

the upper lobe of the right lung, (2) small spots of broncho-pneumonia disseminated in the middle and lower lobes, (3) congestion and oedema of the lower lobe of the left lung. There was considerable constitutional depression. The spleen was tender on percussion. Next day signs of a cavity were present, and the patient became weaker. Operation was contra-indicated by the general condition. The pulse became very bad, the dyspnoea increased, and death occurred 4 days after admission. The temperature varied between 101° and 105.5°, and the urine contained a large quantity of albumin.

The necropsy confirmed the diagnosis. There was fatty degeneration of the liver. No trace of tuberculosis could be found in the lungs or in the mediastinal glands. There was marked anthracosis. The left lung was much congested, and the bronchioles were filled with pus. The heart was hypertrophied. In slides on which bruised portions of lung had been smeared there were found (1) a bacillus of medium length, thicker in the middle and thinner at the ends, and staining by Gram's method, (2) small cocci arranged as diplococci or in masses and not staining by Gram's method, (3) cocci arranged in small heaps, and large diplococci staining by Gram's method. Aërobic cultures gave a pure culture of a microbe which was arranged in diplococci and tetrads and stained with Gram's solution. Anaërobic cultures showed the staphylococcus parvulus, and the fusiform strepto-bacillus mentioned above. It can be freely cultivated only in tubes containing some other germ. The interpretation of the result of this examination appears to be triple infection due to inhalation from bacillus tetragenus, staphylococcus parvulus, and strepto-bacillus—that is one aërobic and two anaërobic organisms. This case follows Guillemot's law of pulmonary gangrene. "The necessary cause of pulmonary gangrene is the development of strictly associated anaërobic organisms." But this law does not

appear to be absolutely correct, as several writers have described cases in which no anaërobic organism could be found, but it holds true for most cases.

Movable Kidney.—Sigvard Madsen (*Nordiskt Med. Arkiv.*, Afd. 2, Haft. 1, 1902).—This condition should be earlier recognised and treated. It may be considered present when the kidney can be palpated during inspiration with the patient in the horizontal position. One hundred cases were examined. They consisted of 2 men, 39 married and 59 unmarried women. In 76 % of the married and 57 % of the unmarried the entire kidney could be palpated, in the remainder only a portion of the organ could be felt. The right kidney was most frequently affected and the condition was most common between the ages of 20 and 50. Associated changes in the relations of the stomach and intestines are often present and nervous dyspepsia nearly always exists. In addition there may be marked anæmia and general weakness. Local or shooting pains due to the dislocation of the organ were rather rare. A general hereditary tendency to weakness of abdominal ligaments and laxity of muscles probably predisposes, but in many cases repeated pregnancies were a direct and exciting cause.

Treatment should be directed to the maintenance of general health. The dyspepsia should be thoroughly investigated and receive close attention. At bedtime the body should be rubbed with a mixture of equal parts of brandy and water. Complete rest is necessary, but if unattainable, the patient should at least lie down for an hour or two each day. Constipation is frequent and purgatives are constantly needed. A strong flannel belt should be worn continuously and readjusted daily to see that it maintains pressure on the parts desired. Abdominal massage is particularly recommended as it not only gives tone to the muscles of the gut and abdominal wall, but stimulates the portal circulation and assists purgation. Local pains require warm

fomentations, narcotics, and absolute rest. Medicinal treatment should be continued until all dyspeptic and nervous symptoms have disappeared. The belt should however be worn for a year or more. Madsen has not had recourse to any operative treatment and considers that this is unnecessary if the condition is diagnosed early and treatment is at once commenced.

See also "REVIEW," pp. 15 and 101.

Vincent's Angina.—Lämmerhirt (*Deutsche Med. Woch.*, June 19, p. 442).—In Vincent's angina the tonsils are covered with a membranous exudation. The general symptoms are slight and the glands at the angles of the jaw are but little swollen. An organism known as the *B. fusiformis* is constantly present in the exudation and the deeper layers of the tonsils, either in pure culture or in symbiosis with spirilla. Löffler's bacillus is never found. If the *B. fusiformis* is present alone the membrane separates in a few days without formation of an ulcer; if spirilla accompany it there may be considerable necrosis and deep ulceration of the tonsils, which may not heal for weeks. The writer reports a case which is so far atypical in that only one tonsil was affected and the necrosis was too rapid for the formation of a membrane.

A child was suddenly seized with pain in the throat and slight pyrexia on May 11. On May 12 there was on the left tonsil, which was swollen, a superficial, circumscribed ulcer with jagged edges and a sloughing surface. The glands at the left angle of the jaw were slightly enlarged, and the temperature was 101.5°. The rest of the pharynx and the right tonsil were normal. The necrosis spread both superficially and deeply, until the cratiform ulcer involved the whole of the anterior half of the tonsil, which became greatly swollen. The temperature, however, fell and, except for some pain on swallowing, the child was well. On May 16 the surface of the ulcer was cleaner and the tonsil less swollen. It was not completely

healed until May 31. Thus the total duration of the illness was 20 days. Cold applications to the throat and painting with a 3 per cent. solution of nitrate of silver appeared to have no influence. The bacillus fusiformis was repeatedly found with spirilla, and a few cocci. Diphtheria bacilli were absent.

defence assuming that faecal matter (*i.e.*, contents of the large intestine) might be found under the finger-nails of persons of grossly uncleanly habits—an explanation which could not apply to substances found only in the small intestine. The man was convicted of murder of the second degree.

The Forensic Importance of Distinguishing between the Contents of the Small and Large Intestine.—Prof. Austin Flint (*New York Med. Jour.*, July 26).—A woman went to a room in a disreputable hotel about midnight with a man who disappeared in the night and was never discovered. In the morning she was found strangled and mutilated. A man who occupied the opposite room in the hotel and was seen to enter it about 1 a.m. and to leave it about 5 a.m. was charged with the crime. The prosecution supposed that he entered the room of deceased after her companion had left. On his shirt and stockings, on the bed-ticking, floor, and door of his room, on a knife found in his room, and on the floor between his room and the woman's room mammalian blood was found. On matter taken from under his long finger-nails bilirubin, tyrosin, cholesterin, triple phosphates, columnar epithelium, eggs of round worms, starch granules, and partially digested muscular tissue and vegetable matters were found.

Prof. Flint insisted that these substances came from the small intestine. He based his opinion mainly on the presence of tyrosin and bilirubin. In the large intestine the tyrosin would be changed into indol and the bilirubin into stercobilin or hydrobilirubin. This reasoning applies only to normal digestion: in some forms of diarrhoea and in Asiatic cholera tyrosin may be found in the faeces; similarly, in certain pathological conditions bilirubin may be found in the faeces. At the necropsy it was found that a portion of the lower part of the small intestine had been cut out and that the large intestine was uninjured. The forensic importance of the point arose from the

Prominence of the Left Supraclavicular Fossa in Aneurysm of the Aortic Arch.—Dorendorf (*Deutsche Med. Woch.*, July 31, p. 554).—In aneurysm of the aortic arch the left supraclavicular fossa and consequently the groove above the clavicle are frequently obliterated or even prominent. At the same time the left external jugular vein is usually distended more than the right. The supraclavicular swelling is soft and disappears on pressure applied from above downwards. The cause is compression of the left innominate vein, and the consequent distension of all veins entering it. Simple dilatation of the arch appears to be insufficient to produce this symptom, for in 14 cases in which it was secondary to aortic incompetence there was no supraclavicular bulging even when the aorta could be felt in the suprasternal notch. On the other hand the symptom has been well marked in the last 6 cases of aneurysm of the arch which have occurred in Prof. Gerhardt's clinic in Berlin. Aneurysm of the innominate artery would probably produce the same symptom, but it is so rare that it may be practically disregarded. The writer does not claim that the sign is pathognomonic. Like "tracheal tugging" and other signs of aneurysm it may doubtless be produced occasionally by mediastinal growths. Enlarged mediastinal glands are, from their anatomical position, more prone to compress the superior vena cava than the left innominate vein, in which case the supraclavicular prominence is bilateral. In emphysema also supraclavicular bulging is almost invariably bilateral. In the writer's 7 cases of aortic aneurysm with left supraclavicular distension the left bronchus was

compressed in 3, and the trachea in 2. In none, however, was emphysema of the left lung demonstrable during life, and in the 2 fatal cases it was not found post mortem. Radiographs and necropsies concurred in showing that the bulging did not depend on extension of the aneurysmal sac into the cervical region.

The Diagnosis of Pentosuria.—Manfred Bial (*Deutsche Med. Woch.*, April 10, p. 253).—The diagnosis of pentosuria ("REVIEW," p. 94) is of great importance, since every recorded case has been mistaken for diabetes mellitus and uselessly treated by dieting. According to Blumenthal applicants for life insurance in perfect health, but for pentosuria, have been rejected. Pentose is neither fermentable nor dextro-rotatory. The writer has modified the orcin reagent introduced by Salkowski and Blumenthal, so that the detection of pentose is now simple. The reagent consists of 1 to 1½ gm. of orcin, 500 gm. of fuming hydrochloric acid, and 25 to 30 drops of a 10 per cent. solution of perchloride of iron. 4 to 5 c.c. are added to 2 to 3 c.c. of the suspected urine in a test tube, which is then stoppered with a plug of cotton wool and heated over a flame until bubbles appear. If much pentose is present a copious green precipitate immediately appears; if the amount is less the mixture assumes a beautiful green colour after it has cooled for 15 to 20 seconds. Normal or diabetic urine does not give this reaction. The addition of ferric chloride to fuming hydrochloric acid and orcin increases their power to separate from pentose the substance, probably furfural, which with orcin gives the green colour, so that the necessity for the prolonged boiling of fuming hydrochloric acid and urine, which is required in Salkowski's original test, is avoided.

The Localisation of Gastric Tumours.—K. Glaessner (*Berlin. Klin. Woch.*, July 21, p. 675) has shown that while the cardiac end of the stomach secretes both pepsin and rennet, the pyloric portion secretes only pepsin. Analysis of gastric contents obtained by the stomach tube after a test breakfast shows that the fact may be of diagnostic value. Thus in 13 cases of gastric carcinoma the position of which was subsequently verified by operation or necropsy, the composition of the gastric juice constantly varied according to the situation of the tumour. If it were in the fundus the secretion both of rennet and pepsin was diminished or entirely suppressed, if in the pylorus the quantity of rennet was normal, while the pepsin was diminished. The only exceptions appear to be the cases in which, though the tumour is pyloric, the rennet is reduced owing to secondary dilatation and atrophic gastritis.

Prolonged Excretion of Typhoid Bacilli in the Urine.—Büsing (*Deutsche Med. Woch.*, June 19, p. 443).—A soldier had typhoid fever in Tientsin in Oct., 1901, and was sent on Dec. 7, when convalescent, to Taku, whence he was discharged "cured" on Dec. 24. On his return to Bremen, 4 months later, typhoid bacilli were repeatedly found in the urine—on April 6, 7, 8, 14, and 17, 1902. Between April 18 and 29 46 gr. of urotropine were taken. On April 19 no bacilli could be found, and the urine was sterile when examined on April 23 and 26, and May 1, 3, 7, and 10. The only symptom was occasional strangury, which practically gave no trouble. The urine of 15 other soldiers who had typhoid fever in China about the same time contained no bacilli.

See also "REVIEW," Vol. II., pp. 74 and 321, and Vol. III., p. 735.

THERAPEUTICS.

Oil Massage in Phthisis.—Duncan Turner, M.R.C.P. (*Lancet*, Oct. 18, p. 1047).—In phthisis open air and generous diet often avail not, and many cannot take advantage of them. The value of massage and electricity in restoring tone and improving nutrition, and of rubbing with cod-liver children suffering from intestinal tuberculosis, as recommended by the late Sir J. Y. Simpson, led the writer to try electricity and massage in pulmonary tuberculosis. It occurred to him that many of the remedies employed in phthisis might with advantage be administered through the skin. Cod-liver oil, creasote, and guaiacol are often nauseous and productive of indigestion. All their effects can be obtained by external use. The writer uses a mixture of 4 drachms of creasote or guaiacol, one drachm of oil of citronelle, and cod-liver oil to 4 oz. The oil of citronelle is added to disguise the smell of the creasote and cod-liver oil. Oil massage is performed daily. The patient after being hardened by repeated cold spongings for 2 or 3 days lies naked on a couch. The body is sponged with a weak solution of bicarbonate of soda (one drachm in a pint of water) and dried with a soft towel. The oil mixture is then rubbed in all over the trunk from the neck to the pelvis, back and front, the quantity used at a time being from one to two tablespoonfuls according to size and age. In cold weather a small blanket serves to keep the body partially covered. The treatment occupies a quarter of an hour. Its efficacy depends much on the vigour of the operator. If the mixture is carelessly smeared on without being rubbed in it will be of little benefit. Over the abdomen some kneading is done in addition to the rubbing. When galvanism is used generally only one pole is applied over the solar plexus and the

other is moved up and down over the upper part of the spine. What part of the results, if any, is due to the electricity the writer cannot say. The cases in which galvanism was not used seemed to do as well as those in which it was.

The advantages of the treatment are many, including immediate relief to symptoms. If the patient is feverish the temperature generally falls a degree or more after every rubbing, the cough is easier, the appetite improves, and the night sweats cease; there is a general feeling of well-being and the improvement in the lung goes on *pari passu* with the gain of weight. At the Mount Macedon Sanatorium, near Melbourne, 24 patients gained during their stay 206 lb., whereas under the old treatment another 24 gained only 68 lb.

In private practice, the writer uses pure olive oil alone. He is not satisfied that this is so efficacious as the cod-liver oil and creasote, but unquestionably it is a great help. He specially claims for oil-massage that it shortens the time of treatment. He does not recommend it in advanced cases or when there is proneness to hæmorrhage. In children the results are better than in adults: if the climatic conditions are favourable, the treatment acts like a specific, and if commenced at an early stage will generally restore health in from 2 to 3 months.

The Treatment of Gastric Ulcer.—Curt Pariser (*Deutsche Med. Woch.*, April 10, p. 261 and April 24, p. 308).—Fleiner's method of treating gastric ulcer consists in washing out the stomach every morning before breakfast until the fluid returns perfectly clear, and then introducing by the stomach tube 15 to 20 gr

(231 to 308 gr.) of subnitrate of bismuth suspended in 200 c.c. (7 oz.) of tepid water. The tube is then closed for 5 or 10 minutes, while the patient lies in a position in which the bismuth is most likely to come in contact with the ulcer, for instance, on the right side if the ulcer is on the pylorus. The water is then allowed to return and the tube is removed. The patient remains in the same position for 30 minutes before he has breakfast. Bismuth in large quantities forms an aseptic crust over the ulcer, to which it adheres more readily than to intact mucous membrane. After a time the treatment is given only every other day, or when symptoms of irritation recur. The results are excellent. The disadvantages of the method are the practical impossibility of performance outside an institution, the reluctance to which it is submitted to by patients, and, possibly, the danger of perforation, which might be brought about directly by the stomach tube or indirectly by the rise of pressure which accompanies retching and straining.

The writer claims that neither the stomach tube nor the prolonged maintenance of an often uncomfortable posture is essential. Matthes has shown that bismuth, though it first collects at the lowest point in the stomach, is rapidly spread over the gastric mucosa in a layer of uniform thickness whatever position may be assumed. Fifteen to 20 gm. of subnitrate of bismuth should be taken every morning fasting, stirred up in a glass of water and washed down with a drink of tap water. The patient should lie on his back for 45 minutes before having breakfast. The treatment by bismuth is very expensive, but as its action depends merely on its insolubility in the gastric juice, any insoluble powder is of equal value. In several hundreds of cases the writer has substituted a powder consisting of equal parts of prepared chalk and talc (magnesium silicate), mixed with light magnesia in the proportions of 10 to 15 gm. of the latter to 60 gm. of the former. If diarrhoea is produced, the light magnesia may be omitted. Of this powder $1\frac{1}{2}$ heaped-up teaspoonfuls are taken stirred

in water every morning before breakfast, and every evening at 10 o'clock, 3 hours after the last meal. The results fully equal those obtained by bismuth, and the powder has the advantage of not blackening the stools and masking melæna. It should be given for from 3 to 8 weeks according to circumstances. The only cases not amenable to this treatment are those of acute ulcer with pyloric stenosis, secondary dilatation of the stomach, and stagnation of its contents, in which irrigation with the tube or operation is indicated.

In every case of gastric ulcer absolute rest in bed is essential. No diet suitable for an ulcerated stomach can furnish sufficient calories for the slightest exertion, much less for full work. The out-patient treatment of gastric ulcer is, therefore, a mistake. The patient should not be allowed up until some days after the ulcer is healed. This is recognised by the absence of pain after food, and of tenderness, and above all by the behaviour of the dorsal "pressure point" first described by Cruvelhier. This is a circumscribed spot of tenderness situated between and somewhat to the left of the tenth and twelfth dorsal vertebræ; rarely there may be a tender spot on the right side also, but it is always less marked than on the left. The point is always present unless the ulcer is situated on the anterior wall; this occurs, however, in only 5 per cent. of all cases. Pressure on it produces intense pain, as long as the ulcer is unhealed, even though every other symptom of ulcer has disappeared. Women should rest during the next 2 menstrual periods. As regards diet milk should never be given alone; it should be boiled with some farinaceous substance, such as tapioca. Eggs are allowable if beaten up, or mixed with weak broth. Some preparation of casein, such as "nutrose," is useful. Meat juices and extracts should be avoided. After convalescence is established all meat should be pounded, and later minced. For months all vegetables should be put through a sieve and given as purée. Under the writer's powder treatment complete abstinence from food by the

mouth is seldom necessary, and hardly ever for longer than 3 days. During this time ordinary nutrient enemata are required and it is sufficient to give injections of wine in about 8 oz. of mucilaginous fluid.

Athrepsia and its Treatment.—Prof. Combe and M. Narbel (*Archives de Méd. des Enfants*, July, pp. 385 and 401).—Athrepsia may occur in children of any age. Chronic digestive disturbances produce more or less extensive atrophy of the alimentary mucosa. The child passes through a gastro-intestinal and a hæmatic phase. Sometimes the symptoms are those of dyspepsia, sometimes of catarrhal, enteritis acute or chronic. Appetite is diminished, vomiting is frequent, and the motions are abundant, and fluid. Wasting is more or less marked. The child is restless and fretful, sleeps badly, and is tormented by thirst. The urine is diminished. The intestinal symptoms become more marked. The density of the blood is considerably increased. Appetite is still further diminished, the mouth is kept open and there is great difficulty in swallowing fluid, due apparently to pharyngeal spasm which is so painful that the child prefers to endure the sufferings of thirst. Vomiting becomes more marked and more spontaneous, the motions more enteritic in character, foetid, and glairy; there is frequent colic and tenesmus. The circulation of the blood is impeded owing to its increased density. The face and limbs are pale or show a bluish tinge. Secretions are diminished, the mouth is dry, the nutrition of the skin is defective, and consequently erythematous eruptions and superficial ulcers appear round the anus, and on the buttocks and thighs, and crops of boils on the rest of the body. The urine may be almost wholly suppressed. Later the face becomes paler, the eyes sunken, the features drawn, and the skin is thrown into flabby folds. In other children the pallor is accompanied by swelling of the face and limbs, although there is no albumi-

nuria. In the fully developed or cachectic period of athrepsia, the wasting is more marked; the tissues are peculiarly dry and have a withered appearance; there is a characteristic grinning expression and old appearance to which the name of "Voltaire faces" has been applied. The fontanelles are depressed and the cranial bones overlap.

When atrophy of the intestinal mucous membrane supervenes, vomiting, and diarrhoea disappear; the motions may be normal in number and almost healthy in appearance, but are characterised by a marked putrefactive odour, and at times contains glairy and colloid material. Nourishment is taken with great difficulty, and notwithstanding the dry parched condition of the mouth fluids are refused on account of the severe pharyngeal spasm. The abdomen is retracted, and the intestines feel doughy on palpation. The liver and spleen are usually enlarged; the blood shows a high percentage of hæmoglobin and the number of red cells may reach from 6 to 6½ million in per c.mm., in striking contrast with the pallor of the patient. Circulation is thus impeded, and the blood passes more slowly through the tissues. The temperature is consequently sub-normal. The urine contains excessive phosphorus and chlorine compounds as well as nitrogenous material. Indol, phenol and skatol are increased, thus pointing to augmentation in tissue waste. If the case does not end fatally it may pass into the so-called athrepsia of later childhood, the features of which are poor development and nutrition, indigestion, defective circulation, and a liability to inter-current diseases.

The indications are (1) to diminish intestinal putrefaction by lavage of the stomach with alkaline solutions, and of the intestine with a solution of tannin of 1 to 10 per 1000 in order to precipitate toxic compounds. No pressure should be employed. It is well to use for the intestine a tube 20 to 40 in. in length, which is slowly introduced while the fluid is injected in order that the latter may open a passage for the tube.

This, if properly performed, does not cause inconvenience or pain. The child should lie on the right side. From 12 to 24 oz. may be injected. When appetite fails, calomel may be prescribed, a small dose being given at night, and followed by a mild purgative in the morning. If there is diarrhoea tanningen or dermatol may be given twice or thrice daily. A carbohydrate diet diminishes putrefaction in the large intestine. When absorption is defective food should be slightly constipating, in order that it may remain longer in contact with the healthy portion of the intestinal mucosa and of a non-putrefactive character, so that it may stimulate the power of absorption. Thus milk, white of egg, broth meat and jellies should be avoided, while different forms of malted foods, Bengers' food, macaroni and vermicelli may be given. For older children many of these may be made into porridge, puddings, etc. In mild cases milk may be added in small amount. Only late in the cases, and when considerable progress has been made, should any nitrogenous material be added. It is important to compensate for the non-absorption of fluid due to diarrhoea. This may be done by injection into the cellular tissue or rectum of from 2 to 4 oz. of normal saline solution twice a day. Loss of heat must be prevented by hot bottles, wool jackets, and, in very young children, the incubator. To prevent infection the mouth should be cleansed, and the skin carefully washed with some antiseptic solution, and as far as possible the patient should be kept in a spacious and sunny room. Assimilation may be stimulated by various drugs. M. Combe speaks highly of cacodylate of soda which may be used in small doses for 2 or 3 days. If continued longer, it is liable to increase enteritis. It may be given subcutaneously. Phosphorus compounds are valuable on account of the general loss of nutrition and defective assimilation. The various forms of hypophosphites and glycerophosphates are indicated. Hence the importance of giving vegetable products which contain phosphorus in considerable

quantity, such as the various cereals. Puddings made with a little milk and eggs are almost an ideal diet in athrepsia. Probably of all materials lecethin is the most important. It is found abundantly in the yolks of eggs, in the form of albuminoid compounds. Only in the raw state can lecethin be absorbed. Muggia (*Pediatrics* 1898) injects yolks of eggs subcutaneously. The eggs must be absolutely fresh, and must be carefully disinfected, previous to being opened. The yolk is received into a sterilised vessel and about the third of its weight of normal saline solution is added. These are mixed with a glass rod and filtered through gauze. One c.c. is injected into the gluteal region at a time. If aseptic methods are scrupulously followed there should be no local or general reaction. The amount injected may be increased to 10 c.c., the number of injections varies according to the case, but 20 should be the minimum. Considerable increase in the weight of the child and in the amount of hæmoglobin and red blood corpuscles in the blood are produced. Bone marrow is valuable, as it contains much assimilable phosphorus. It may be obtained from the shin bone of the calf, triturated with tepid water, and freed from fat. It may be given in milk or as soup. It is inferior to lecethin.

Narbel gives important details in the management of athrepsia, especially in the use of lecethin. He relates several cases of very severe athrepsia, of which the following is typical. A male child, aged 7 months, had suffered from severe intestinal catarrh for 2 months. He lost weight, took little nourishment, and frequently vomited. The stools were often glairy and liquid. The appearance of the child was that of typical athrepsia as described above. When the treatment by subcutaneous injection of lecethin was begun, he weighed 9 lb. The condition improved considerably. At the end of a month, during which he had 2 daily injections of 1 c.c. lecethin, his weight had increased to 10½ lb. His general condition was much improved; the motions became normal, the

limbs more rounded, and the expression placid. M. Narbel sums up his results thus : There is a notable improvement in the function of the whole of the digestive tract and the stools diminish in number and increase in consistence. There are considerable improvement in the general condition of the patient, rapid increase in weight, marked improvement of appetite, and better assimilation. Syphilitic pseudo-athepsia does not seem to benefit by this treatment.

The Ethyl-ester of Para-amidobenzoic Acid("Anæsthesin") as a Local Anæsthetic.

—Prof. C. von Noorden (*Berlin Klin. Woch.*, April 28, p. 374) has employed the ethyl-ester of para-amidobenzoic acid as a local anæsthetic during the last 2 years. It is commonly known, after its discoverer, as Dr. Ritsert's "anæsthesin," and is a white, tasteless, inodorous powder, which is almost insoluble in cold water, soluble with difficulty in hot water, readily soluble in spirit, ether, chloroform, acetone, fats, and oils. In moderate doses it has no toxic action on animals, though in very large doses, which are never necessary in man, it may produce temporary methæmoglobinæmia without methæmoglobinuria. Its toxic action, which is allied to that of phenacetin, is most marked when dissolved in oil.

For clinical purposes it may be considered to be non-toxic. It has been tested in the following conditions: (1) In gastric hyperæsthesia, with pain and nausea after food, whether due to gastric ulcer or nervous dyspepsia, its action at least equals that of chloroform, chloral hydrate, and powdered orthoform. It should be given in doses of 0.3 to 0.5 gm. (4 to 7½ gr.) 10 to 15 minutes before food. The maximum daily dose is 2.5 gm. (38 gr.). (2) In cough and dyspepsia, when due to irritation in the pharynx or the entrance to the

larynx, lozenges of anæsthesin made up with sugar or gum have an excellent sedative effect when slowly dissolved in the mouth. This lasts longer than that obtained by lozenges containing cocaine and antipyrin. They often succeed in alleviating the pain of tuberculous laryngitis.

(3) To allay laryngeal hyperæsthesia it is the best local application in powder form, and is far superior to orthoform, which is irritating as well as anæsthetic. Good results were also obtained by inhalations consisting of 10 per cent. of anæsthesin in an emulsion with water and tragacanth, and a spray of 3 per cent. anæsthesin dissolved in 45 parts of alcohol and 55 parts of water. (4) As suppositories 0.2 to 0.5 gm. (about 3 to 7½ gr.) may be given with ol. theobrom. The results in painful hæmorrhoids were excellent and far superior to those obtained by orthoform. In tenesmus depending on inflammatory conditions of the mucous membrane, however, it proved inferior to opium and belladonna. (5) By the introduction of urethral bougies, each containing 0.3 gm. (about 4 gr.) good results were obtained in 3 cases of stranguary in the female—one due to non-gonorrhœal urethritis, the others to nervous causes. (6) Applied as a 10 per cent. ointment with lanoline excellent results were obtained in pruritus, intertrigo, and scrotal eczema. Several cases of obstinate pruritus vulvæ of diabetic origin were cured after diet and salicylic acid had failed. In the pruritus of jaundice and old age the results were usually good, though in 2 cases it failed completely. (7) In powder form or ointment it may be applied to painful wounds, such as varicose ulcers. It is absolutely non-irritating, while orthoform is irritating and almost caustic. Briefly, anæsthesin may be applied in all cases in which an insoluble local anæsthetic is indicated. Orthoform is more toxic owing to its phenol constituent.

SURGERY.

The Treatment of Fractures of the Tibia and Fibula.—R. W. Murray, F.R.C.S. (*Lancet*, Sept. 13, p. 738).—The depreciation in the wage-earning capacity of a labouring man after he has sustained an oblique fracture of the lower third of the tibia has been estimated at between 40 and 60 per cent. In simple fracture of the tibia and fibula, whether oblique or not, the limb is usually fixed in a black splint with a vertical foot-piece and side splints. The ordinary back splint with the vertical foot-piece necessitates a forced and uncomfortable position. Mr. Lane points out when a person is lying on his back the natural tendency is for the feet and legs to rotate slightly outwards. When this splint is applied the foot is securely fixed to the vertical foot-piece and prevented from rotating outwards, but the limb above the point of fracture not being so securely fixed rotates slightly outwards and so the broken ends of the bone are not in accurate apposition. An endeavour is also made to bring the heel in contact with the foot-piece, and the calf muscles thus being put on the stretch any slight overriding of the broken fragments is increased. In the majority of cases the uninjured limb is a guide. Why not then endeavour to imitate the natural position of rest as far as possible?

The splint which the writer has found most generally useful for fractures of the tibia and fibula, including Pott's fracture, is a *back splint with a foot-piece, which instead of being vertical is inclined outwards to an angle of 70° and with the same inclination forwards*. A splint so shaped permits of the foot and leg being fixed in the natural position of rest. The patient is more comfortable, and as no endeavour is made to force the foot into an unnatural vertical position there is much less tendency to the formation of a sore over the heel. Moreover, the tendo Achillis not being in a state of passive tension (as when the

vertical foot-piece is used) the tendency to overriding of the fragments is lessened.

The leg-piece of this splint should be of such a length as to permit of the knee being bent and, after the applications of side splints, to allow the leg and splint to be swung from a cradle. When the fractured bone has firmly united, say at the end of 4 weeks, movements of the ankle- and knee-joints should be encouraged, and massage practised if available. The mistake usually made is keeping the injured limb in a state of immobility too long. If the fracture has been oblique it should be remembered that the newly-formed callus will have to bear the strain of the body-weight, and consequently will be apt to "give" if the patient rests the full weight of his body on the injured limb before the end of the third month.

But whatever form of splint is employed, in a certain proportion of cases of simple fracture of the tibia, especially when the fracture involves the lower third and is oblique or spiral, even under anæsthesia it is impossible by splints alone to get the broken ends in accurate position and to keep them there. A skiagraph taken after the splint has been applied will prove this. Mr. Lane correctly says: "Spasmodic muscular contraction is a slight and transitory obstacle to the replacement. It can be measured and placed in abeyance by an anæsthetic. In simple oblique fractures the chief obstacle to replacement of the fragments in accurate apposition is hæmorrhage into, and inflammation of, the soft parts." The writer adds another factor occasionally met with—namely, the piercing of adjacent muscles and fascia by the sharp ends of the broken bone. But "accurate apposition" of the broken ends of the bone is not essential in order to restore perfect utility to the limb. To cut down upon and expose the broken ends is necessary only in a minority of cases.

In deciding for or against operation the employment of the patient and the position and character of the fracture as determined by the X rays should be considered. If the fracture is situated in the upper two-thirds of the tibia—namely, that part of the bone above the positions of the tendons—operative interference is seldom necessary. If the lower third of the bone is involved and the fracture is oblique or spiral, and after the fracture has "set" one-half or more of the fractured surfaces are in contact, and there is no rotatory displacement, operation usually is not called for, but if these conditions cannot be obtained the broken ends should be exposed and fixed accurately together. There are however, cases in which the X rays show not only an oblique fracture involving the lower third of the tibia and considerably less than half of the fractured surfaces in contact, yet the patients have recovered with a useful limb, but such recoveries are the exception. Figs. 1 and 2 show this point well. In doubtful cases the employment of the patient will probably turn the balance for or against an operation. A leg with the utility slightly impaired might still serve all the purposes of a tailor, but the same degree of deficiency would render it useless to a postman. Although operation appears to be simple enough there are risks. A free incision is advisable and the chances of sepsis will be considerably diminished if fingers are not put into the wound. The results in compound fracture of the tibia are frequently much better than in simple fracture, no doubt owing to the wound relieving the soft parts of extravasated blood and inflammatory products. Further, the practice of enlarging the wound for cleansing purposes permits of the view of the position of the bones. Figs. 3 and 4 show the result of operation.

In "Pott's fracture" the X rays should be employed, for in a few hours the swelling of the foot and ankle makes it practically impossible to estimate correctly by ordinary means the exact

nature of the injury and the relative position of the broken bones. The usual defect remaining after reduction is a slight displacement outward and backwards. The splint described will be found especially useful. If the foot is forced into a vertical position the tension on the tendo Achillis will tend to exaggerate the already slight displacement of the foot backwards. When a fracture is close to a joint early passive movement and massage are important and should be adopted at the end of the third week. The writer has never considered it necessary to operate upon these cases and thinks that the indications for operation must be exceptional.

The Treatment of Intra-Peritoneal Abscess of the Appendix.—F. C. WALKER, F.R.C.S., (*Lancet*, July 19, p. 145) recommends the following method when the abscess is intra-peritoneal, *i.e.*, shut off by surrounding adherent coils of intestine and not adherent to the parietes or only so slightly as to form no protection. In such cases, therefore, the general peritoneal cavity has to be opened before the abscess can be dealt with.

A comparatively small incision is made through the skin down to the rectus sheath, which is divided. The length of the initial incision depends mainly upon the thickness of the abdominal parietes. The rectus muscle being pulled inwards, the posterior part of its sheath is opened and the peritoneum is incised and held apart by forceps. If now the finger is introduced and a search more or less roughly carried out for whatever may be found the consequences will be disastrous: the abscess cavity will almost inevitably be opened and the contained pus escape into the general peritoneal cavity. Great care is necessary to avoid this catastrophe, as in the young even after many days, the adhesions are frail and unless the intestines are manipulated gently the adhesions give way and expose the general peritoneal cavity to the infection of the escaping pus. To avoid this, when the peritoneum is



FIG. 1.—Simple fracture about the middle of the tibia and fibula.



FIG. 2.—After recovery. No operation ; useful limb.

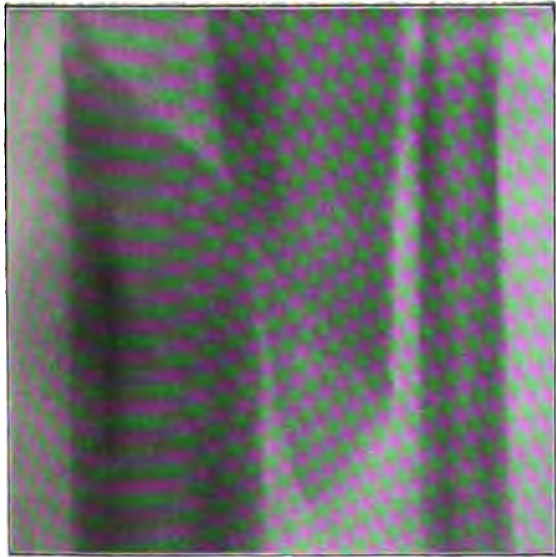


FIG. 3.—Before operation.

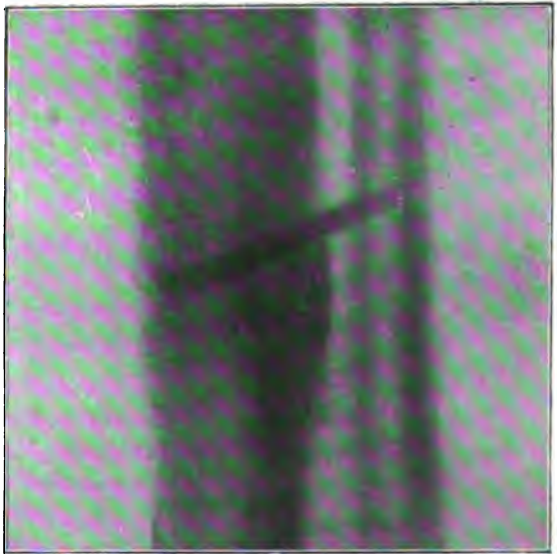


FIG. 4.—After operation.

been incised a blunt hook with a large curve is used to pull up the parietes on the left side of the incision. The general peritoneal cavity is shut off all round by introducing pieces of Gamgee tissue, about from $1\frac{1}{2}$ to 2 in. wide above, internally, and below, thus forming a crescent around the affected area. Now the abscess may be looked for by gently separating the adhesions in the neighbourhood of the appendix. This must be done gently, otherwise the pus, which is always under a certain amount of tension, may escape too rapidly to be controlled. If this does occur, as it sometimes will in spite of all care, the patient should be immediately tilted over to the right side and the pus directed to a small bowl held underneath. When the pus escapes gently it can be sponged up as it wells out of the cavity until the tension has ceased, when the opening is separated more widely and the cavity is thoroughly cleansed by sponging with Gamgee tissue (marine sponges should not be used). If the appendix is to be removed this should be done now. The cavity is then dusted with iodoform and filled with iodoform gauze. It is important, especially for the first 24 hours, to keep the surroundings as dry as possible and iodoform powder with moderately light packing of the gauze answers well. This packing is removed on the fourth day, *i.e.*, after the bowels have usually acted. In some of the cases peroxide of hydrogen was used to cleanse the abscess cavity. The abdominal incision is closed by one set of interrupted fishing-gut sutures, care being taken that each layer of the parietes is picked up by the needle—a large curved Hagedorn—as each suture is passed.

aseptic precautions. The only explanation appeared to be that during operation a small pustule on the joint burst. The internal semilunar cartilage had been removed. Within 5 days pain and constitutional symptoms developed. Free drainage and irrigation were promptly and systematically conducted, but without benefit. There were a temperature 103° , rapid pulse, delirium, and extreme exhaustion. Unless prompt measures were immediately adopted the patient evidently would rapidly sink. He was given the option of amputation or taking the risk of having the joint treated on the open method, and he chose the latter.

On the fifteenth day after the cartilage was removed a transverse incision was made through the skin over the centre of the patella. The patella was sawn across in a line corresponding with the skin section. The joint was fully flexed and thoroughly opened, and the crucial ligament divided. All exudations on the surfaces and in all the cavities of the joint were carefully scraped away with a surgical spoon, and all the surfaces were freely swabbed with lint saturated with turpentine. The whole of the exposed surfaces, and every crevice, was gently packed with iodoform gauze. With the joint well flexed (beyond a right angle), layers of wood-wool were so adjusted by bandages that they not only afforded a compact support to the back of the knee, but also firmly retained the knee in an acutely-flexed position—a position which made it all but impossible for any discharge to accumulate without coming into contact with the iodoform gauze packing.

The result was striking. Pain disappeared, the temperature fell, the tongue became clean, appetite was restored, and the delirium subsided. The dressings were left undisturbed for two days, and when removed the tissues not only looked clean, but healthy granulations were visible. Each succeeding day the surface of the joint and the crural pouch were gently syringed with a warm solution of izal and repacked with iodoform gauze, and the dressings reapplied. Similar

The "Open Method" of Treating Septic Arthritis of the Knee.—Walter Whitehead, F.R.C.S. Ed. (*Brit. Med. Jour.*, June 21, p. 1523).—The patient was the victim of an unavoidable misfortune which occasionally results from opening the knee-joint, notwithstanding the most elaborate

dressings was repeated daily until the fifth day, when it was observed that the granulations were unduly exuberant and flabby. On the fifteenth day after the open method was commenced, the leg was straightened and placed on a long back splint, with a foot-piece attached, and the limb adjusted so as to check any tendency to either axial rotation or lateral displacement. At the same time the upper fragment of the patella was removed, but the lower portion was left undisturbed as it had mysteriously disappeared among the granulations. As the granulations advanced the articular cartilage was gradually absorbed. The granulations restored the natural contour of the knee, and when cicatrization had advanced circumferentially quite a third of an inch the whole surface was covered with large layers of cuticle by Thiersch's method.

Cases of Cancer of the Breast in which the Patients have Survived the Operation from 5 to 32 years.—Thomas Bryant, F.R.C.S. (*Lancet*, May 17, p. 1397).—The 3 years' freedom from recurrent disease after a primary operation, which has been laid down as an indication of a cure of cancer, is unreliable. The writer divides his cases into 3 groups.

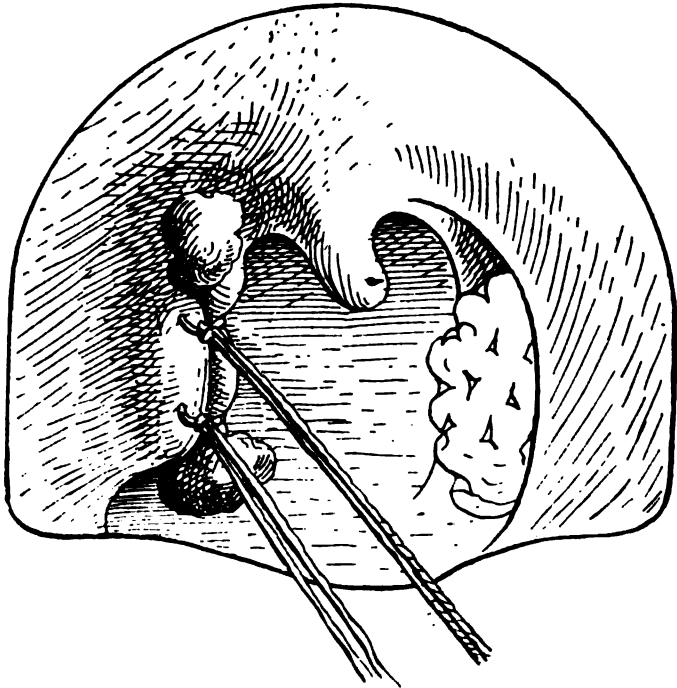
Group I. includes 17 patients relieved by operation who are now alive or have died without evidence of recurrent disease 5 or more years after operation. There is no evidence of recurrence from 5 to 10 years after the primary operation in 9 cases and from 10 to 20 years in 8 cases. Thirteen of these patients are now alive and apparently well. Mr. Bryant's routine operation is to remove the whole mammary gland with the skin and fat over the diseased area; and in every case, for examination purposes, to cut into the axilla and to take away suspicious glands or lymphoid tissue. The pectoral muscle he dissects clean but he does not remove it unless it is invaded. The removal of the muscles as a routine measure he regards as unnecessary.

Group II. includes 19 cases of cancer of the breast relieved by operation and followed by recurrence in the seat of the primary operation. In 3 of the cases recurrence took place in the scar of the primary operation and a second operation was performed one year after the primary; 2 of the patients were well and in good health 4 years later, and the third 10 years later. In 9 cases recurrence occurred from 3 to 7 years after the primary operation. In 3 of these no second operation was called for.

Group III. includes 10 cases of recurrence after operation in which the second breast was involved, and 4 cases in which the breast disease was associated with cancer of other parts of the body.

The writer's cases show that the interval between primary amputation of a breast for cancer and recurrence in the scar or the second breast is most uncertain. Whilst in half the cases recurrence took place in 5 years or less, in the second half the interval varied from 6 to 32 years, and in at least two-thirds of these cases it was more than 10 years. The seat of recurrence was in or about the scar in 14 cases; in the scar and axilla in 1 case; in the sternum in 3 cases; in the second breast in 10 cases (in 5 of these the scar of the first operation was likewise involved). In only one operation for recurrence was the axilla cleared out. It is not the writer's custom to clear it out in all cases, yet these results do not suggest an inadequate operation. Operations for cancer of the breast, when undertaken at an early period of the disease, are not so unsatisfactory in their ultimate results as is generally believed. In cases of recurrence not favourable for operation, unless the removal of the ovaries can be shown in the future to be successful, the X rays should be employed (See "REVIEW," p. 394), for great benefit has been derived from them. The influence of the rays must be maintained for several months after it has seemed to be beneficial. A 3 months'

course of about 3 applications a week appears to be the shortest from which permanent good can be expected.



Arrest of Tonsillar Hæmorrhage by Suture of the Pillars of the Fauces over a Compress.—Dr. Escat (*Rev. Hebdom. de Laryngol, etc.*, Sept. 27, p. 381).—A man had chronic follicular tonsillitis with hypertrophy. The tonsils were removed in pieces with a punch which was of defective make in that it had sharp edge. Slight hæmorrhage followed for quarter-of-an-hour. Gargling with cold water gave no result. A jet of arterial blood was seen coming from the upper part of the right tonsillar cavity. Pressure with a tampon of cotton wool held in forceps failed to arrest the hæmorrhage. The galvano-cautery was then applied, but it only increased the hæmorrhage. Seizing the artery with a forceps—a method the writer has found successful in one case—was then tried, but nothing could be gripped. Pressure with a tampon of cotton wool held in position with the middle and index fingers was maintained for 10 minutes. The hæmorrhage reappeared as soon as the tampon was removed. Ice and various hæmostatics, including perchloride of iron also failed. "Ricord's compressor" with the internal pad covered with antiseptic gauze was then used, and arrested the hæmorrhage; but the pain was so great that the instrument had to be removed, when the hæmorrhage was greater than ever. Suture of the pillars of the fauces—a method employed successfully by Baum was then performed. With a needle-holder used for staphylorrhaphy a large curved needle and silk thread was in one movement passed through both pillars of the fauces, and the silk was tied (Fig.). This was not sufficient. A second suture was passed 2 cm. below the first, but in consequence of the separation of the pillars

of the fauces, through each pillar separately. When this suture was tied the tonsillar cavity was closed, but the hæmorrhage continued. A clot formed beneath the sutures and the hæmorrhage seemed to be stopping. Gelatine was injected into the cavity, but had the effect of increasing the hæmorrhage. With a naso-pharyngeal forceps a cylindrical tampon of cotton wool of the size of the little finger was passed from above beneath the upper suture into the tonsillar cavity. It was carried deeper and deeper until it appeared below the lower suture (Fig.). The hæmorrhage, which had lasted 4 hours, was permanently arrested. After 24 hours the sutures and tampon were removed.

This case shows (1) the dangers of using a punch with a cutting edge, (2) the unreliability of the vaunted hæmostatics, (3) the value of suturing the pillars of the fauces over a compress.

Tumour of the Brain Localised by the X Rays.—G. E. Pfahler, M.D., and J. B. Deaver, M.D. (*Philadelphia Med. Jour.*, Sept. 27, p. 439).—A woman, aged 21, was seen in consultation.

Three years before when going down stairs her left leg suddenly gave way. For an hour she was numb in the left half of the body and her speech was thick. From this time she had attacks of weakness and numbness in the left arm, leg, and trunk, and sometimes in the face. Intermittent headaches followed, and about the end of the first year became continuous. Power was gradually lost in the left arm and leg. There was a family history of cancer. Sight was lost from optic neuritis first in the left, then in the right eye.

There was left hemiparesis. The left arm and fingers were partially flexed. The arm could be raised with difficulty to the level of the shoulder. Movements of the left limbs were ataxic. The left superficial and deep reflexes were exaggerated. A tumour of the pre-frontal and post-parietal region was diagnosed. A skia-

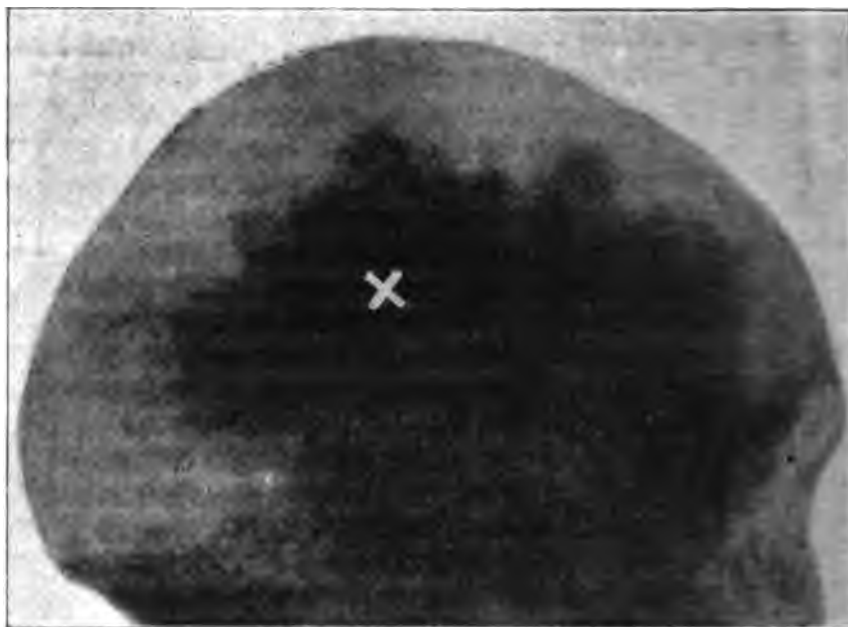


FIG. 1.—Skiagraph showing the position of the tumour. The deepest portion of the shadow is in the position of the cross, which corresponds to a point just in front of the central fissure. The other shadows are usually observed in cranial skiagraphs.



FIG. 2.—Photograph of the tumour after several days' immersion in Müller's fluid, natural size. The upper rough surface, where the dura was torn away, is shown.

graph showed across the fissure of Rolando (Fig.) an abnormal shadow, irregular in outline. The middle meningeal artery and its branches were seen in its anterior part. The white cross indicates the centre of the shadow.

An operation was performed. Profuse hæmorrhage occurred from the incision in the scalp and was seen to come largely from the bone. A trephine opening $\frac{3}{4}$ in. in diameter was made and the hæmorrhage became more alarming. The button of bone removed was eroded. The wound was packed and closed, so as to control the hæmorrhage. Later a second operation was performed, hæmorrhage being prevented by temporarily closing the carotid arteries according to Crile's method (*Annals of Surgery*, April, 1902). This surgeon has shown that with special appliances both carotids may be temporarily clamped for periods up to 48 hours. By this device he has removed growths from the head and neck. But he mentions no intracranial operation. After clamping both common carotids trephining was performed $\frac{1}{2}$ in. behind the former opening. The bone between the two openings was removed and the entire opening enlarged until it was about 3 in. in diameter. There was slight hæmorrhage which was easily controlled. On incising the dura a large tumour was found filling the opening and extending under the bone. It was enucleated with the fingers and proved to be encapsulated (Fig. 2). Microscopic examination showed that it was a spindle-celled sarcoma. Death occurred 3 hours after the operation.

Bilateral Strangulated Hernia in an Infant.—T. H. Kellock (*Lancet*, July 5, p. 21).—An infant, aged 10 weeks, was admitted to hospital on March 8, for irreducible right inguinal hernia. At the age of 7 weeks the mother noticed a swelling in the right groin. For this circumcision was performed on March 4; at that time the hernia disappeared when the child was quiet and still. She had never noticed any swelling on the left side. On the 6th the swelling

became larger and more tense and could not be reduced; it remained down for the 2 following days, during which he was very fretful and occasionally vomited after taking the bottle.

He was very fretful, crying almost continuously. There was a right inguinal hernia which was irreducible under an anæsthetic. It was therefore operated on and was found to contain a knuckle of small intestine tightly constricted at the inguinal ring, which was very small. The bowel was dark blue and deeply marked where it had been constricted. Before the bowel could be reduced a rather free incision had to be made in the constriction at the neck of the sac and after it had been reduced the sac—to which the vas deferens was closely adherent—was ligatured at the neck and removed. Two silk sutures were used to close the inguinal canal. The external wound was sutured and dressed with gauze and collodion.

The child progressed favourably but cried a great deal. On March 10 a hernia was found in the left inguinal region and was reduced with some difficulty. On the 18th the wound was healed and the stitches were removed. The hernia on the left side was present again but was easily reduced. On the 19th he was discharged wearing a skein truss on the left side. He was re-admitted 4 days later, the hernia in the left groin having been irreducible for 5 hours. An operation was performed and there was an almost identical condition to that on the right side. The wounds soundly healed and there was no sign of return of either hernia.

There was probably a partially closed funicular process of peritoneum on both sides into which successively the almost constant pressure from crying drove a knuckle of intestine. Both inguinal rings were very small and had to be rather freely incised before the bowel could be reduced. This is probably the most difficult part of the operation in an infant. It is better to make a free incision than to use force in attempting to reduce the very slender and congested bowel. The absence of

fluid in both sacs was rather unusual and necessitated an extra amount of care in opening them.

Treatment of Aneurysm of the Popliteal Artery by Excision of the Sac.—Acquaviva and Lop. (*Presse Méd.*, Aug. 2, p. 739).—A sailor complained of an abscess under the right knee. There were expansion, thrill, and murmur. The swelling disappeared when the femoral artery was compressed in Scarpa's triangle. Two months previously he suddenly felt pain in the right leg. The pain became severe and was worse during the night and on exertion. Soon a small swelling appeared in the right popliteal space.

He walked with difficulty and was unable to work. The limb was rendered bloodless by an Esmarch's bandage, and, under antiseptic precautions, an incision 4 inches long was made in the centre of the popliteal space. The popliteal vein and its branches were found adherent to the sac, and could not be detached. Both popliteal vessels were ligatured in two places at the upper part of the incision, and divided between the ligatures. The aneurysm was then dissected out from above downwards. The adhesions were so firm that the sac tore and part of it was left adherent. The arterial branches were dissected out, tied, and cut. A silk ligature surrounding both vein and artery was placed at the lower margin of the sac. The portion removed measured 2 or 2½ inches. The popliteal artery being atheromatous cracked under the ligature. A clot of blood of the size of a pea was contained in the aneurysm. For 3 days the limb was cold; the pulsation of the vessels in the foot was absent; sensibility was intact; the general condition was satisfactory. On the fourth day after the operation the foot was warm and the patient complained of a burning sensation in it. On the following day there was no difference between the temperature of the two feet, but the hyperæsthesia of the right limb

was marked. After 10 days the part was dressed. There was union by first intention except in the centre of the incision where the threads had cut through owing to the skin being weakened by prolonged poulticing. In 17 days circulation was completely restored, and in 3 weeks the patient got up, and movements of flexion and extension were performed without pain. In a month he was completely cured.

Regeneration of Long Bones after Resection for Osteomyelitis and Tuberculosis.—Fritz Berndt (*Munch. Med. Woch.*, April 1, p. 516) maintains, in opposition to most English surgeons, that the process in acute necrosis usually begins in the medulla, and not in the periosteum or compact tissue, and is, therefore, primarily acute infective osteomyelitis rather than periostitis. This occurred in every one of 40 cases seen by him during the last 5 years. That the greatest accumulation of pus may be subperiosteal and that recovery may follow simple periosteal incision prove nothing. But cases in which there is no subperiosteal abscess, but the epiphyseal lines are acutely tender, with high pyrexia, drowsiness, delirium, and restlessness show the presence of osteomyelitis. In such if the bone is trephined pus, which usually contains staphylococci, is found. The writer includes in "medulla" that part of the spongy tissue of the diaphysis adjacent to the epiphyseal lines.

In Germany it has lately become customary to treat all cases of acute infective osteomyelitis by early and free trephining, and thorough scraping ("excochleation") of the inflamed focus, rather than by simple incision. All the writer's cases were so treated, but whether rightly is doubtful, as the most radical scraping did not always prevent extension of the process, irruption of pus into the joint, or pyæmia. In such cases most surgeons amputate at once. Before resorting to this the writer prefers to extirpate the affected bone. [Holmes, Macnamara, and others in England have

long advocated early removal of the shaft if it is separated from the epiphysis and lying loose in an abscess cavity. Ed.] Kürser and others object that the new formation of bone is frequently unsatisfactory and that shortening results. This objection has no force, however, if the method is reserved as an alternative to amputation; if not successful the latter is still available.

CASE 1.—A boy, aged 7, was admitted to hospital on Nov. 17, 1898, with acute osteomyelitis of the left tibia and effusion into the knee-joint. An incision was made, a large subperiosteal abscess was opened, and the tibia in its whole length was chiselled open, thoroughly excochleated, and the cavity, which was full of pus, packed with gauze. As the symptoms persisted the infiltrated upper epiphysis was scraped on Nov. 25, but without avail. On Nov. 29 the knee-joint, which was full of pus, was opened. As the upper epiphysis was riddled with abscesses and the articular cartilage was perforated the whole of the tibia, except the lower epiphysis, was removed, and the wound plugged. On Dec. 12 the temperature was normal, and the head of the fibula was fixed by silver wire to a depression made in the external condyle of the femur. On Jan. 9, 1899, the leg was put up in plaster-of-Paris. On Feb. 6 the wound had healed. On March 25 the patient was discharged in robust health able to walk in splints. The knee-joint was almost completely ankylosed, but the tibia was satisfactorily replaced (Fig. 1). There was $1\frac{3}{4}$ in. shortening, which was corrected by a thick sole.



FIG. 1.—Total regeneration of the tibia.

CASE 2.—A girl, aged 15, was admitted on Feb. 12, 1899, with acute osteomyelitis of the left femur of a week's duration. There was deep fluctuation. The temperature was 105° . On Feb. 13 an incision 10 in. long was made over the outer side of the thigh, a large subperiosteal abscess evacuated, and the shaft opened up, scraped, and plugged. As the general condition deteriorated, the lower third of the femur, except the lower epiphysis was resected. The wound was plugged, and an extension apparatus applied.

After several injections of colloid silver the general condition rapidly improved, and on June 21 the patient was discharged with complete regeneration of the femur, though with 2 in. of shortening (Fig. 2). The knee-joint admitted of slight movement, and she could walk well with a surgical boot.

CASE 3.—A boy, aged 4, had had osteomyelitis of the left tibia for a fortnight. There were pyrexia and effusion into the knee-joint. On Oct. 19, 1901, the upper two-thirds of the tibia were opened up bloodlessly and packed. The medulla was infiltrated with pus. The temperature fell temporarily, but rose again to



FIG. 2.—Regeneration of lower end of femur.

104°. On Oct. 25 the knee-joint was opened and drained, and the upper epiphysis of the tibia and two-thirds of the diaphysis were removed. The temperature fell, and on Dec. 1 the head of the fibula was secured to a groove made in the external condyle of the femur. On Dec. 10 plaster-of-Paris was applied. On Jan. 26 he was discharged with $1\frac{1}{4}$ in. of shortening, but with an excellent tibia.

Four similar cases are still under treatment. (1) In a youth, aged 16, the lower two-thirds of the femur were removed. (2) The lower half of the femur was removed in a youth, aged 18. (3) The lower third of the femur with the lower epiphysis was removed in a girl, aged 16. (4) The whole of the tibia, with the exception of the lower epiphysis,

was removed in a boy of 12. A good result is probable in all. In the 2 following cases the removal of the bone was not an alternative to amputation:—

CASE 4.—A boy, aged $4\frac{1}{2}$, had osteomyelitis of the left fibula of 4 weeks' duration. On Feb. 8, 1900, a long incision was made, and as the bone was lying loosely in an abscess cavity it was removed entire. On April 4 he was discharged cured with a completely regenerated fibula.

CASE 5.—A boy, aged 11, had osteomyelitis of the head of the right femur, with partial destruction of the acetabulum. On Aug. 6, 1901, the right hip-joint was resected. Later, there were metastatic abscesses in the left scaphoid bone of the foot, the right scaphoid bone of the hand, the left clavicle, and the humerus, all of which were opened. As suppuration from the clavicle was copious it was removed *in toto*. In a week the temperature reached normal, and in 6 weeks the clavicle was completely regenerated.

In 2 cases the writer was forced to amputate after extirpation of the bone, as the general condition of the patients was not satisfactory. In the after-treatment growth of bone should be stimulated by packing the periosteum, or if this does not succeed, by the introduction of foreign bodies such as celluloid rods, animal charcoal, or boiled bones of animals. In the following 3 cases the osteomyelitis was tuberculous:—

CASE 6.—In a boy, aged 5, an abscess over the lower end of the ulna was opened, exposing roughened bone. Later the medulla of the ulna was opened up freely as far as the upper third. It was converted into a grey material containing typical tubercles. After the failure of 4 excorchiations, the lower two-thirds of the ulna, excepting the lower epiphysis, which was healthy, was removed. The wound healed, but two years later there was no trace of regeneration. The disease had begun in the spongy tissue of the lower end, and had infected the medulla secondarily. The mistake was made of suturing the wound 3 days after the resection instead of stimulating growth by packing.



FIG. 3.—Complete regeneration of humerus.

it would retain its vitality. Though this did not occur, it acted as a foreign body and stimulated the growth of new bone. On Oct. 10 it had been partly absorbed, and was removed through a sinus which had formed over it. On Jan. 4 the wound had completely healed. The newly formed humerus (Fig. 3) was $2\frac{1}{2}$ in. shorter than the left, and the whole arm about 4 in. shorter, but flexion and abduction at the shoulder were free, and flexion at the elbow satisfactory. The movements of the hand and fingers were normal.

CASE 8.—A girl, aged 3, had tuberculous disease of the left hip-joint with a large abscess. On Jan. 8, 1901, the hip-joint was resected. After the upper end of the femur was removed the process was seen to extend deeply into the medulla. The compact tissue was as thin as tissue paper. The incision in the soft parts was prolonged downwards, and over 3 in. of the upper end of the shaft of the femur was sawn off. On May 24 the wound was completely healed, and the child could walk with the leg in plaster. There was satisfactory new formation of bone, the upper end of which was in the acetabulum. There was $1\frac{1}{2}$ in. of shortening. On Oct. 20 there was no trace of disease. The child walked with a slight limp and could flex the thigh at the hip almost to a right angle.

These cases show that the danger of deficient regeneration of bone after extensive resections is over estimated. Two conditions are necessary for success: (1) the periosteum should be preserved or at any rate not extensively destroyed, and (2) the wound should not be closed before the new bone has appeared.

Treatment of Anal Fissure. — Prof. Gussenbauer (*Wien. Klin. Woch.*, Jan. 9, p. 31).—Recent superficial fissures may be cured by laxatives and iodoform or dermatol ointment. If the fissure extends to the submucous tissue and there is spasm of the sphincters operation is demanded. Incision, excision, and cauterisation may all effect a cure. Cauterisation is tedious

CASE 7.—A girl, aged 8, had tuberculosis of the right humerus and elbow; over the external condyle a sinus led down to bare bone, and over the back of the left hand was a patch of lupus, which was excised. After several unsuccessful scrapings the elbow-joint was resected, on April 17, and the medulla of the humerus, in which were tuberculous deposits was scraped and packed. As the process continued to spread and there were numerous sinuses the whole of the humerus was extirpated as the only alternative to amputation at the shoulder joint, and the wound was packed. The whole bone was infiltrated as far as the upper epiphysis. On July 18 the wound was granulating well. A piece of bone, 6 to 7 in. long, was cut off the crest of the right tibia with a circular saw, and placed in the periosteal sac of the right arm, in the hope that

and painful. Incision with division of the sphincter is a serious operation, which exposes the patient to the risks of sepsis. Incision without, or with only partial division of the sphincter may fail to relieve the spasm. To all these methods, that of forcible stretching of the sphincter under an anæsthetic is superior. The fissure and the painful spasmodic contraction of the sphincter alike are cured, and the after-treatment is less painful and less prolonged than in any other method. The sphincter must be stretched until completely relaxed. This is best accomplished by the introduction one after the other of the two index fingers into the rectum, and making traction on them in opposite directions. Recamier, who introduced the method, employed the two thumbs, a fixed support being supplied by the palms of the hands placed flat on the nates; if there is much anal spasm, however, the introduction of the thumbs is extremely difficult. The stretching of the fissure is so gradual that any extension by tearing is slow and is followed as a rule by but little hæmorrhage. The anal portion is irrigated with salicylic lotion and dried with sterile cotton wool, the fissure is powdered with iodoform or packed with iodoform or dermatol gauze and a dry dressing is placed over all and secured by a T-bandage. If the fissure is complicated by hæmorrhoids a moist dressing may be preferable. The usual result is that the patient on regaining consciousness is in pain for 1 or 2 hours. The pain then ceases, the bowels, even on the first day after the operation, act painlessly, and there is no anal spasm. The fissure in uncomplicated cases heals completely in from a few days to a fortnight, according to its size. The presence of polypoid excrescences, complete or incomplete fistula in ano, or hæmorrhoids may prolong the after-treatment. The bowel regains continence in a few days; the writer has never had a case of prolonged incontinence after stretching the sphincter. Anæsthesia should be deep; local anæsthesia of the mucous membrane is insufficient.

Operation in Appendicitis.—Prof. Rinne (*Deutsche Med. Woch.*, July 10, p. 497), who 2 years ago was an advocate of expectant treatment in perityphlitis, now in the light of further experience advises immediate operation in every case in which the presence of pus is suspected. Practically all cases can be divided into the slight, which end in recovery without suppuration in a few days, and except for severe pain and some pyrexia, cause but little general disturbance, and the severe, which are always associated with more or less suppuration. The first group correspond anatomically to inflammatory swelling of the mucosa of the appendix, cicatricial stricture, or peritoneal adhesions, the second to suppuration, gangrene, or perforation. In the first group no operation is required unless a relapse occurs; it should then be performed after the second attack. In the second group some advocate immediate operation in every case, others expectant treatment until signs of peritonitis appear. Though by chance excellent results are seen in cases treated on the latter principle there is always the danger that the operation when performed will be too late. A perforated gangrenous appendix is surrounded by an abscess containing putrid pus, which is separated from the peritoneal cavity merely by adhesions. Every movement, even accidental shaking of the bed, may break these down, and lead to fatal peritonitis. Why should a patient be exposed to such dangers, when they can be avoided with certainty by an early operation?

The writer has treated 155 cases on these principles. Forty-eight were slight cases. In 27 of these the appendix was removed in an interval with 27 recoveries; the remaining 21 were not seen again after the first attack. In 107 cases there were various degrees of septic purulent inflammation and gangrene. In 64 of these there was perforation or gangrene of the appendix with a circumscribed abscess or local peritonitis. In all an operation was performed immediately, and all ended in recovery. In 15 there was acute general peritonitis without a trace of fibrinous peritoneal adhesions; in all these



Colles' fracture a day after the injury.



Colles' fracture 13 weeks after the injury, treated by plaster case. Impaction of lower end of shaft in carpal fragments.

death occurred whether an operation was performed or not. From these absolutely hopeless cases those in which the peritonitis, though progressive, is of a fibrinous character with a marked tendency to encapsulation of the purulent foci, should be sharply distinguished. If the various abscesses can be found and drained recovery is possible. On opening the peritoneum pus may escape in such quantity that general infection of the peritoneum appears at first to be certain, and yet the true condition may be a large abscess in the recto-vesical or Douglas' pouch with numerous smaller encapsuled abscesses. Of 28 such cases recovery followed operation in 10. Some of the patients were *in extremis* when admitted to hospital or the results would have been better. The writer always removes the appendix.

The Disuse of Splints in Colles' Fracture.—Jonathan Hutchinson, F.R.S., (*Poly-clinic*, July, p. 351, and Oct., p. 465) has for many years advocated the treatment of all ordinary fractures of the lower end of the radius without splints. During the latter half of his tenure of office as surgeon to the London Hospital he never used them, and got much better results than during the first half, when he took much trouble with them. Excepting certain rare cases, in which the fragments are loose and can be easily pulled into position, and as easily slip out again, nothing more should be done than to place the limb on a thick, firm cushion, and cover the part with lint with an evaporating lotion. These fractures are almost always impacted, or, what comes to the same thing, the fragments are locked together. You cannot move the carpal fragment, and, if you could, it would be bad practise to attempt it. It was an unfortunate day when Colles discovered that what had been considered badly sprained or partially dislocated wrists were fractures. Far better treat them as sprains. Many stiffened hands have resulted from the painstaking

use of splints since Colles' day, and many hours of ingenuity have been wasted in devising them. The degree of displacement of the carpal fragments varies much; in many cases it is slight. The displacement at the moment of the fall is irrevocable. It is not due to muscular action. If you attempt to replace the fragments by pressure, curves in the splints, pads, twists of the hand, etc., all that you will do is to jam the tendons against the projecting bones, cause them to become glued to their sheaths, and produce stiffening from adhesions. These conclusions, reached many years ago, are now confirmed by radiography. At the last meeting of the Brit. Med. Assoc. radiographs of Colles' fracture were shown by Mr. Robert Jones of Liverpool. Not one suggested that any advantage could have resulted from the use of splints. In a large majority of cases the displacement of the carpal fragment is insignificant, and no advantage can possibly result from attempts to rectify it. In some cases the bone is simply cracked across without any displacement whatever. In the minority of cases, in which there is definite displacement, this is not considerable, and rectification is impossible.

Fig. 1 is a radiograph of a Colles' fracture taken two days after the injury. Fig. 2 shows one 13 weeks after the injury; the lower end of the shaft is impacted in the carpal fragments. This fracture was put in plaster for 5 weeks and then treated by massage for a month. The adhesions were broken down under chloroform. At the end of 3 months the result was unsatisfactory. On the other hand in a case treated without splints the arm could be used after a month, and although there was displacement there was no stiffening.

In fractures above the expanded carpal end of radius—that is, fractures other than Colles'—splints may be advisable. But as a practical rule it may almost be said that unless the ulna is also broken, a splint is not necessary. So long as the ulna is entire it serves as a splint, and no great shortening or lateral displacement

can occur. When there is displacement which you can easily remove by extension and which returns when extension is remitted, use splints, but not otherwise.

Magnesium Foil in the Treatment of Ankylosis.—Hübscher (*Corr.-Bl. f. Schweiz. Aerzte*, Dec. 15, 1901, p. 785).—Magnesium foil is absorbable, and when inserted into the tissues of animals may disappear entirely within 18 days. Payr was the first to utilise this property by the insertion of minute tubes of magnesium foil in suture of nerves and arteries. Magnesium transmits the X rays, and the process of absorption cannot be followed by them. The metal may give rise to a great quantity of gas when left behind in a wound, but this, if an escape is provided, appears to be harmless. One litre of hydrogen is produced by about 1 gm. of magnesium. The writer has employed the foil to prevent recurrence of ankylosis after operation.

A girl had tuberculous arthritis of the right knee. The disease was cured but the joint remained flexed from contractures of the flexors. The condition invariably relapsed although the limb was straightened repeatedly under an anæsthetic. At the age of 9 she was seen by the writer. The patella was firmly adherent to the femur. The leg and thigh deviated from a straight line by 25°, but this was reduced to 10° when an extension apparatus was worn. On April 2 an incision 3 in. long was made parallel to the inner border of the patella, and the capsule of the joint was opened for the same distance. The adhesions between the patella and the femur, which were cartilaginous at the periphery and osseous at the centre, were divided by the knife and chisel, and a piece of magnesium foil, 0.5 mm. thick and about 0.5 gm. in weight was inserted between the two bones. Some iodoform oil was left in the joint and the capsule and skin were closed by sutures. The joint was immobilised with plaster-of-Paris. There was neither pain nor pyrexia, but on the

fourth day, when the dressing was removed, the whole joint appeared greatly distended. Palpation produced crepitation as of subcutaneous emphysema. The removal of 2 sutures was followed by the escape of a quantity of gas. The wound closed on the tenth day. On April 16 starch splints were substituted for plaster. Daily massage of the quadriceps femoris, and active and passive movements of the joint were employed. In a month all apparatus was discarded. On Oct. 19 the patella was freely movable, and the limb could be flexed to an angle of 40° and extended to within 10° of the normal. The 30° of free movement enabled the girl to walk with a scarcely perceptible limp.

Owing to preponderating contraction of the flexors there is a great tendency for the malposition of the limb to recur after forcible straightening. This can be prevented only when the quadriceps extensor is sufficiently strong. Bruns has successfully reinforced an atrophic extensor by freeing the flexor tendons and suturing them to it. This method is obviously inapplicable if the patella is ankylosed with the femur. If the ankylosis is not bony it may sometimes be broken down without a cutting operation. If an open operation is performed it is very difficult to prevent recurrence. Helferich frees a portion of the vastus internus and interposes it between the femur and patella, and this method has given good results. The interposition of magnesium foil is simpler and at least equally satisfactory.

Kummell's Disease (Traumatic Spondylitis).—Weigel (*Münch. Med. Week.*, June 3, p. 945) reports a case of this condition, which is of especial interest, in that a necropsy was made 6 months after the accident. On March 20, 1901, a man while helping another to lift a heavy box, suddenly experienced violent dorsal pain which compelled him to drop his load and abandon work. After a short rest he resumed work. There

was constant but bearable dorsal pain, which steadily increased until 2 months later work became impossible. The surgeon consulted discovered nephritis and could find nothing wrong with the spine except tenderness over the first lumbar vertebra. The nephritis probably began in the spring after an attack of influenza. In spite of rest in bed and suitable treatment for nephritis the pain and tenderness in the back steadily increased in severity, so that tuberculous or carcinomatous disease of the spine was suspected. There was no paralysis or disturbance of sensibility. Death from nephritis occurred on Sept. 2, 1901.

NECROPSY.—There were the usual signs of nephritis. In the body of the first lumbar vertebra was a cavity of the size of a hazel nut which was filled with a material resembling red marrow and of the consistency of stiff jelly. The walls of the cavity were formed by normal spongy tissue, except anteriorly where the boundary was formed by the compact tissue which was bulged forwards so as to form a projection towards the abdominal cavity. There were similar but smaller cavities in the cancellous tissue adjacent to the superior and inferior surfaces of the body. There was no sign of caseation, pus, or malignant growth.

The process was probably rarefying osteitis, which was the lesion found in Kümmell's original cases. The disease appears always to originate in an injury to the bony structure of a vertebra, such as a fissure in the cancellous or compact tissue, too slight to produce the ordinary symptoms of fracture. The accident in all the reported cases was comparatively slight. When death does not result from an intercurrent disease the process progresses until the strength of the vertebra is insufficient to bear the weight of the body. Its collapse is followed by angular curvature, and the spinal symptoms of compression. The condition is of considerable medico-legal importance.

Otitis Media Purulenta treated by the Dry Method.—F. W. Davis, M.D. (*New York Med. Jour.*, July 12, p. 50).—While many cases of purulent otitis end in recovery under watery injections, etc., cleansing and gauze drainage are more effectual in all cases, whether acute or chronic. The discharge should be thoroughly wiped away with a cotton-carrier, exposing the drum, or tympanic cavity if the drum is destroyed. In the latter case the cotton-carrier can be introduced into the middle ear to cleanse it of all secretion. A narrow strip of dry gauze should then be introduced through a speculum and the canal loosely packed to the meatus. The packing should be allowed to remain until soaked with the discharge, whether this takes one or 24 hours. It should then be removed and a piece of dry cotton placed in the meatus and left until the next packing. The packing should usually be done twice daily in acute cases; in chronic cases once daily is sufficient. No antiseptics are necessary. Plain sterile gauze is used. In chronic cases with offensive discharge a few instillations of boric acid in alcohol before each packing correct the fœtor. The alcohol aids the treatment by its drying action. The draining away of the discharges accomplishes cures more rapidly than any other method, and is agreeable to the patient. Very few cases will not yield to this treatment.

A boy, aged 12, had double purulent otitis media for 9 years. The membranes were about half destroyed, and the discharge was offensive. After 8 days of dry treatment the discharge ceased and hearing was greatly improved. Three months later there was no relapse.

Superficial Anæsthesia in Minor Surgery.—Prof. Riedel (*Berlin Klin. Woch.*, July 7, p. 629) recommends a method of chloroform administration, which for the past 20 years he has found extremely useful in minor surgery. After fasting the patient inhales 60 to 100 (usually

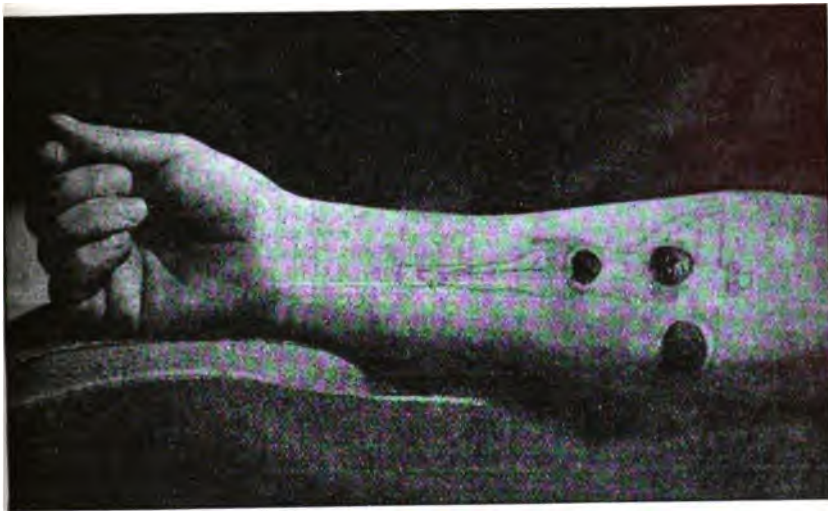
about 80) drops of chloroform within 2 minutes. The anæsthetic, for which ether may be substituted though it is not so convenient, is given from a drop bottle. This quantity produces complete analgesia, which is present before the stage of excitement, without abolishing consciousness. The method is suitable only for short operations such as the extraction of teeth. The patient feels that the forceps is applied and the tooth removed, but there is no pain. This method is also useful for incision of furuncles near the anus. The application of the ether spray, otherwise sufficient for the purpose, is painful between the umbilicus and the middle of the thigh. It is indicated also for the removal of plugs from inflamed and painful parts. Its chief sphere of usefulness is, however, in the reduction of impacted Colles' fracture and Pott's fracture. The patient may shriek during the process, but if painful, the pain is not remembered. No assistant or anæsthetist is required.

in the other 3 cases, probably because they were removed at the previous operations. The spermatozoa were dead and showed histological changes indicative of prolonged sojourn in the hydrocele fluid. Sometimes the tail was truncated, or absent; sometimes the head was deformed. Frequently endothelial cells had acted as phagocytes on the spermatozoa, as on the red blood corpuscles.

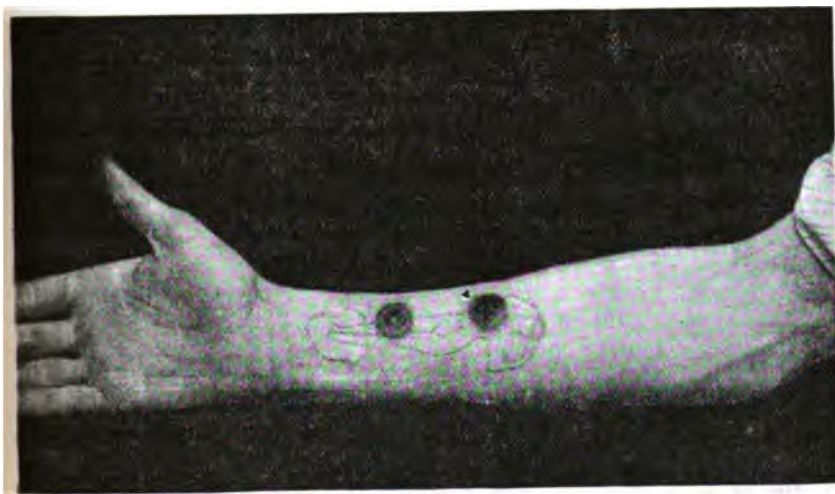
In reference to the difficult question of the pathogenesis of hydrocele the presence of spermatozoa is important. It supports the hypothesis of Morgagni that hydrocele originates in the accidental rupture of little cysts of the testicle or epididymis into the tunica vaginalis. Panas and others have found slight lesions on the surface of the testicle and epididymis, which, perhaps, were the result of cicatrisation of ruptured cysts. As very few spermatozoa may be present careful search with an immersion objective should be made.

The Presence of Spermatozoa in Hydrocele Fluid.—M. F. Barjon and M. A. Cade (*Bulletin de la Soc. Méd. des Hôpitaux de Lyon*, June) found spermatozoa in 5 out of 8 cases of ordinary (idiopathic) hydrocele, whereas they did not find them in 4 cases of symptomatic hydrocele, due to orchitis, tuberculosis, and syphilis. In 3 of the cases of ordinary hydrocele puncture had previously been performed, and in none of these were spermatozoa found, but they were found in the remaining 5 cases in which puncture had not been performed. In these latter cases the hydrocele was carefully incised under anæsthesia, so that the spermatozoa could not have been introduced from a wound of the testicle or epididymis. Spermatozoa were not found

Frambœsiform Chancres. — Jonathan Hutchinson, F.R.S. (*Polyclinic*, Oct., p. 469).—Chancres on other parts than the genitals seldom show characteristic induration and vary greatly in features. Often they assume the form of a mass of granulation tissue considerably elevated and not unlike a small raspberry. This is shown in the accompanying illustrations of chancres from tattooing. In all 3 cases the sores were exactly alike—an elevated mass of florid rather firm granulation tissue on almost healthy skin without any approach to the induration of the Hunterian chancre. This frambœsiform character is important, because it has been insisted on as distinguishing "Yaws" or "Framboesia Tropica" from syphilis.



Three chancres from tattooing. They were raised and firm.



Chancres from tattooing.
Third month.



Chancre from tattooing.

OBSTETRICS AND GYNÆCOLOGY.

Extra-Uterine Pregnancy following Old Salpingitis.—Dr. Cullen (*Johns Hopkins Hosp. Bulletin*, June, p. 150).

CASE 1.—A woman, aged 26, had old tubal adhesions on both sides. These were readily broken up on bimanual examination under ether, and at the same time she was curetted. For several weeks bimanual massage was performed, with much benefit.

Two years later she was seen again. She had missed her period for 5 weeks and then passed some clots, which she thought were due to miscarriage. The temperature was 100°, and there was excruciating pain above the umbilicus. She was very pale, and felt that she would die unless something were promptly done. Vaginal examination showed a bulging in the vault, but on account of extreme sensitiveness and abdominal rigidity nothing further could be determined. On opening the abdomen ruptured left tubal pregnancy was found. The pelvis was filled with dirty fluid and dark clots. The pain above the umbilicus was due to almost complete obstruction of the bowel. Two small clots lying on the mesentery of the small intestine had become partly organized and were growing together. They were so contracted as to almost completely constrict a knuckle of gut. At the point of constriction the outer surface of the intestine was already covered by a thick layer of fibrin. The patient, although pulseless when leaving the table, made a good recovery.

CASE 2.—A woman, aged 26, had marked induration in the pelvis and pyrexia. Douglas' pouch was opened from below. On the right side was a small tubo-ovarian abscess, from which about 30 c.c. of pus were removed. On the left side numerous adhesions were broken up. Drains were introduced, and recovery

followed. Two years later she missed a period for 2 weeks, and then had the characteristic bloody discharge. Sudden collapse occurred, and several days later the pulse was almost imperceptible, and she was blanched and breathed with difficulty. On vaginal examination a firm mass bulged into the vagina. This filled the entire pelvis, and was continuous with a distinct area of hardening filling the lower two-thirds of the abdomen. The abdomen was opened, and 3 litres of coagulated and dark blood were removed. On the left side was a ruptured tubal pregnancy and a 2 months foetus. On the right side was an abscess 10 cm. in diameter. Recovery followed.

These cases illustrate the fact that old tubal adhesions or chronic salpingitis may cause tubal pregnancy, probably either from diminution in the vermiform action of the tube which normally assists the ovum to reach the uterus or from small recesses formed by tubal folds adhering to one another. They also illustrate some of the disadvantages of conservative surgery, which, however, are outweighed by the advantages.

The Vaginal Operation in Extra-Uterine Pregnancy.—P. Strassmann (*Berlin. Klin. Woch.*, June 16, p. 563, June 25, p. 588, and June 30, p. 613) prefers to remove the ovum in extra-uterine pregnancy per vaginam rather than by laparotomy for the following reasons:—(1) The operation gives the best prospect of subsequent normal conception. Von Scanzoni, jun., found that of 156 patients treated expectantly 38 per cent. subsequently conceived, and that of 38 treated by laparotomy, among whom were the most severe cases, 17 per cent., while of 25 treated by a vaginal incision without removal of the sac, as many as 55 per cent. (2) There is no abdominal cicatrix and consequently no danger of ventral

hernia. There are the advantages over expectant treatment of freedom from adhesions and incomplete absorption of the sac, and of a shorter period of treatment. Though the method is especially indicated when there is doubt as to the advisability of expectant or operative treatment the writer would employ it with few exceptions in every case. He has collected 59 cases so treated, 9 of which were his own; in all recovery followed. A case, however, in which Kelly, of Glasgow, simply incised and drained the sac per vaginam, was fatal from sepsis.

Of the writer's 9 patients 6 were between the ages of 20 and 30 and 3 over 30, 6 had been previously pregnant, and 3 sterile. One case of recent rupture was of especial interest, because there had been profuse internal hæmorrhage, which the writer formerly considered to be an absolute indication for laparotomy. In 2 cases the indication for operation was a tubal mole, and in 6 tubal abortion. The Fallopian tube was removed in all but one case, in which it was incised per vaginam, the ovum was removed, its insertion was curetted, and the tubal wound was closed by sutures. This operation has been performed by others. Bröse in a similar case succeeded in expressing the ovum out of the fimbriated extremity, that is in producing artificial tubal abortion. Anterior colpotomy was performed 5 times, posterior 4 times, according to the position of the tumour.

Lysoform is the best antiseptic, as it prevents the vagina from becoming hot and dry. A narrow vagina in a nullipara may be dilated manually, much as is the anus in an operation for hæmorrhoids. The finger in the vagina separates any adhesions which prevent the tumour being brought out through the vaginal wound. As a rule this is not difficult, because during pregnancy the broad ligaments are soft and pliable. The external hand assists as in the bimanual method of examination. If the tube should be ruptured the broad ligament can be brought down by wide pressure forceps

placed on it. The larger vessels should be doubly ligatured, and the peritoneum closed by catgut sutures. It is usually sufficient to remove the Fallopian tube, though oöphorectomy may be required. The opposite side should always be explored, and if an ovarian tumour is present it should be removed. Drainage is unnecessary unless a large cavity is left after removal of the ovum. In the after-treatment temporary catheterism may be required. An action of the bowels is obtained on the fourth day, and the patient gets up on the twelfth or fourteenth. If the sac has suppurated, or there is a suppurating hæmatocele, simple incision and drainage per vaginam is indicated, and no attempt to remove the tube is justifiable. Vaginal irrigations should be avoided, as liable to rupture the adhesions which roof in an encapsuled hæmatocele. The method is as applicable to cases of acute tubal rupture with hæmorrhage as to the complications which may arise after failure of expectant treatment.

The only contraindications to vaginal removal are advanced pregnancy and doubtful diagnosis. In the first, after the third or at most the fourth month, the tumour is too large. In case of doubt, for instance, as to whether there is ruptured tubal pregnancy or gastric ulcer, the operation is practically exploratory laparotomy. But in advanced cases of extra-uterine pregnancy, if the sac has suppurated, it should be opened per vaginam. Thus Madlener removed a full term child by perforation after posterior colpotomy. The placenta was extruded a fortnight later.

See also "REVIEW," Vol. II., p. 192.

Ovarian Tumour Obstructing Labour: Ovariectomy per Vaginam.—John W. Taylor, F.R.C.S. (*Jour. of Obst. and Gynecol.*, Sept., p. 231). —In second labour the accoucheurs felt a tumour in Douglas' pouch. The head was above the brim and pushed forward and to the right.

Under anæsthesia they failed to push the tumour away and delivery by forceps or turning seemed difficult. The membranes ruptured at 8.30 p.m. The pains were strong.

The writer was sent for and arrived about 4 a.m. The whole abdomen appeared filled by the pregnant uterus, which was not displaced laterally, so that the obstructing tumour was evidently behind the uterus. Immediate operation was imperative but it was not easy to decide whether abdominal or vaginal section was the better. If the former were adopted a large incision and probably eventration of the uterus or Cæsarian section would be necessary to gain access to the tumour. In the latter there would be a difficult field for operation, vulva and vagina being converted through prolonged pressure from above into a soft cushion of dilated veins, and the wound would be in a dangerous and septic situation but the tumour could probably be removed without an abdominal incision and without incising the uterus. The vaginal route was chosen. The vulva and vagina were disinfected, and a large incision was made behind the cervix into Douglas' pouch. A great gush of venous hæmorrhage followed, but the cyst wall was immediately seen, and quickly seized and tapped. When about 2 pints of fluid had escaped the hæmorrhage lessened. The collapsed cyst was drawn down into the vagina, and the pedicle felt high upon the left side of the enlarged uterus, but almost beyond reach of the fingers. This was seized with forceps, and after gentle traction on the tumour a stout ligature was passed over the blades, and tied tightly on the uterine side of the forceps. The tumour was cut off and the forceps removed. The only hæmorrhage still came from the incision. The pouch of Douglas was cleansed and the wound plugged with a sterilized pad, but the ends of the ligature were not at this stage cut short.

As the os was soft and dilatable and the patient had been in labour all night she was delivered with forceps. The cervix was held up by volsella and the parts well cleaned. The

pad plugging the posterior incision was then removed, and the ends of the pedicle ligature cut short.

The writer expected that when the uterus was emptied the ovarian pedicle would become much more accessible and, possibly, visible as well as tangible. But it did not, and he had to cut the ends of the ligature short by the sense of touch alone. There was no bleeding from within the pelvis, and that from the vaginal wound was easily controlled by passing one suture at each end of the incision. The rest of the incision was filled with an iodoform gauze drain, which passed into the pelvis at the back of the uterus. The volsella was removed from the cervix, the vagina and vulva were cleansed, and a tight binder was applied to the abdomen. Recovery followed.

Suppurating Ovarian Cystoma Complicating Abortion.—H. Macnaughton-Jones, M.D. (*Med. Press*, July 23, p. 84).—The complication of suppurating ovarian cystoma with pregnancy is infrequent. The suppuration is more frequently attendant upon or a sequel of labour. After parturition the writer removed an enormous quantity of pus from a cyst, which had contracted extensive peritoneal and bowel adhesions, and the patient recovered. It is difficult to say why suppuration should occur more frequently in such cases than in uncomplicated ovarian cystoma. Pressure on the cyst or infection from the bowel may be a factor. In the present case there was no suspicion that the cause was ovarian until the writer saw the patient shortly before he operated.

On April 25 a primipara, aged 35, who was dangerously ill was seen. On April 9 she had miscarried, and the ovum and membranes were reported to have come away entire. There were no symptoms until April 20, when she complained of pain. Vomiting set in on the 23rd, and on the 24th there were great pain and difficulty in micturition. The temperature reached 104°.

The abdomen was swollen, and tender. There was a dull suprapubic hard area. The uterus was fixed and there was a considerable swelling in the utero-vesical space, the os uteri was not patulous, and there was no discharge. The temperature had fallen to 100° . Ice was applied to the hypogastrium, and quinine and opium were given. On the 27th the evening temperature reached 102.4° , there was further abdominal swelling, with but little distress and no vomiting. The pulse had risen to 120. Extensive cellulitis with associated peritonitis were diagnosed. On the 30th the vaginal swelling was softer. The uterus was dilated and explored, and nothing discovered. When the patient was under the anæsthetic the writer concluded that he could not satisfactorily reach any abscess by the vagina. On opening the abdomen a cyst reaching almost to the umbilicus was found. There were extensive adhesions all round the cyst wall, and some bowel and peritoneal adhesions. During the manipulation the cyst burst, discharging a quantity of pus. The cyst was removed and the abdomen was flushed out with formalin solution and thoroughly sponged. The patient progressed fairly for the first 48 hours, but on May 4 she became delirious, her pulse increased to 140, and her temperature was over 101° . She was for several hours unconscious. The bowel, however, responded well to an enema, and the respirations did not increase. Subcutaneous injections of strychnine and nutrient enemata were given. On the night of the 5th she became again conscious, and on the 6th she still further rallied. Recovery followed.

Old pelvic disease, dormant during pregnancy, may be roused into activity by labour and the puerperal state and cause infection of a simple cystoma. The mistake of looking upon this case as one of pelvic peritonitis with cellulitis was excusable, the uterus not being much enlarged though fixed and the supra-pubic area of dullness well localised. This case is an instance of the safe rule to open the abdomen at once

(not without exceptions) when there are combined abdominal and pelvic signs, and when it is uncertain whether the case can be treated successfully by colopotomy. Had the writer, as he first intended, explored with the trocar and bratiched dilator, he should have concluded that he had evacuated the pus from a large pelvic abscess, which would have been a disastrous conclusion.

“Extraperitoneal Hypogastric Laparotomy” in Cancer of the Uterus and Rectum.

—A. Mackenrodt (*Berlin. Klin. Woch.*, Sept. 22, p. 894).—Next to thorough clearance of the parametrium and removal of the upper end of the vagina the most important point in hysterectomy for carcinoma is complete removal of the pelvic glands. This is as necessary to prevent recurrence as removal of the axillary glands in mammary cancer. The fact that occasionally there is no recurrence, although this has been neglected, proves merely that the glands have not been infected, or, if infected, that under certain unknown conditions intra-glandular cancer cells may perish. But only by laparotomy can the parametrium be cleared out and all pelvic glands removed. Theoretically, vaginal hysterectomy is merely palliative, and should be abandoned. But the mortality after radical abdominal operations is so high that some restrict removal of glands to those which can be felt through the pelvic peritoneum, and others have returned to the vaginal method. The writer now claims to have perfected an operation which fulfils all theoretical and practical demands.

(1) The insertions of the recti are divided by a transverse incision immediately above the symphysis pubis. This is prolonged upwards on either side along the external margins of the recti as far as a transverse line, joining the anterior superior iliac spines. This tongue-shaped incision divides all the layers of the abdominal wall except the peritoneum.

(2) The flap is turned upwards and the peritoneum is incised above the bladder. The pre-peritoneal (Retzius's) space is closed and the bladder prevented from slipping downwards and backwards by a few sutures which fix it below the pubic arch. The uterus is withdrawn from the wound and the appendages are ligatured and removed from their attachments to the pelvic wall. The peritoneum of the anterior abdominal wall is sutured to the posterior wall of the pelvis, behind the uterus, so as to surround the anterior and lateral walls of the rectum. The true pelvis is thus roofed in and shut off from the rest of the abdominal cavity, so that the remaining stages of the operation on the pelvic connective tissue and glands are completely extra-peritoneal. The uterus and the parametrium are detached from the vagina, and the peritoneum is peeled off the lateral walls of the pelvis. The whole of the vascular and lymphatic systems of the true pelvis are thus exposed—the sub-peritoneal connective tissue, the internal inguinal glands, and those which accompany the common, external, and internal iliac vessels, the round ligaments, and the obturator nerves. Their removal completes the operation proper.

(3) A gauze drain is conducted from the anterior wall of the rectum out through the vagina. The bladder with its peritoneal covering is then drawn backwards and sutured to the posterior pelvic wall, so as to roof in the recto-vaginal cul-de-sac. The large cavities left after the removal of lymphatics are packed with Mikleicz-drains, the ends of which are conducted out through the lateral arms of the tongue-shaped incision. The ends of the divided recti

are joined with silver wire to the symphysis pubis, and to the skin by silk sutures.

While Wertheim and others have been compelled by results to restrict the indications for radical abdominal removal of uterine carcinoma, the writer has widened them and obtained better results with his operation in each succeeding case. He does not hesitate to resect the bladder, or to operate in the course of septic pyometra. He has in several cases removed glands from the aorta, and has never left any below its bifurcation. When necessary he has completely resected the vagina and the ampulla of the rectum. In the last 11 cases, which included some of the most complicated and advanced growths, there have been 10 satisfactory recoveries. The one death was due to heart disease. These results are attributed (1) to the improved operation by which the danger of peritonitis is obviated; (2) to Mikleicz-drains.

In rectal carcinoma in the female resection is so frequently followed by recurrence in the perivaginal connective tissue, which is inseparably connected with that round the rectum, that the writer invariably removes the vagina, perivaginal connective tissue, and uterus with Douglas' pouch simultaneously with the rectum. The method is essentially the same as that for the uterus alone. In one case the whole rectum and a large portion of the colon were successfully removed with the lymphatics connected with them. This advantage over Kraske's and other operations for the removal of the rectum are evident. In the male the operation is similar but simpler.

NOTES.

THE RELATIONS OF NEURASTHENIA, HYSTERIA, HYPOCHONDRIASIS, AND INSANITY. —Professor Clifford Allbutt delivered an address on this subject at the recent Annual Meeting of the British Medical Association, which, as an original and lucid analysis of these complex nervous states, is a valuable contribution to psychological medicine. He diagrammatically conceives the nervous system as a pile of centres, one upon the other in a vertical line ; the lowermost centre presiding over the earliest functions, and each higher centre in its turn over functions of later and later development. Each later centre he conceives as not only attached to its predecessor directly, but, directly or indirectly, through a series of successive attachments, as co-ordinated also with all its predecessors. Thus the nervous centres are represented not as a pile, but as a system ; and the diagram changes from a column to a cone standing upon its peg—the primordial centre.

In the development of the individual as every later centre enters upon its life it must modify or, in other words, control or inhibit, not only the centre immediately below it, but also all the earlier centres. When control of a particular function is of vital importance a centre, or a relatively small group of centres, besides the general co-ordination, is sometimes specially endowed with the control of that function. This end is gained by provision of a shorter circuit to the part concerned. The heart, for example, is under the influence of many centres ; but it is subjected more immediately to a peculiar

and direct government by a centre or small group of centres in the bulb ; thus it is protected from inconvenient disturbance during the play of higher centres—such, for instance, as those of the emotions—which retain, nevertheless, no inconsiderable influence over it, and, indeed, under critical circumstances, may recover an overwhelming and even a fatal ascendancy. As another example, take the urinary bladder. In the infant it is concerned only with its proper centre, which is low in the scale, and merely suspends incessant rhythmical discharge ; when the contents of the bladder reach a certain level it gets leave to eject them. In a year or two this simple office, fraught with grave inconvenience, finds itself engaged in a more complex order : the vesical centre must come under the inhibition of higher motor centres ; micturition may not take place while, for example, the voluntary muscular system is otherwise engaged ; at least a few minutes of stillness must be agreed upon. So it is with the older child who, during the stillness of sleep, wets its bed ; as more centres are piled up, among them centres concerned with good manners, these in their turn exert suspensory or “inhibitory” authority, which even in sleep does not fall into abeyance. This higher control is gained much later in some children than in others, and in a few is not attained till puberty. Moreover, it may be lost. Thus after a slight cerebral seizure an elderly man regained all powers except mental control over the bladder ; when the urine reached a certain amount it was shot out, often before he could reach the vessel. Conversely, he

found it difficult, or impossible, to micturate before the urine reached the level of vesical intolerance.

Every successive centre then suspends or inhibits every centre below it. As centres multiply, the inhibitions become as multiform; though, by special delegations of control, functions become differentiated and adapted to the mean incidence of circumstances. The will consists as much in suspension of action as in the determination of its release. The man of strong will, as contrasted with the man of impulse, is he who possesses the power of arresting or inhibiting response until it can be made under the best combination of circumstances.

If our eyes were opened we should see the human body the centre of a shimmering cloud of incident vibrations of many hues and velocities. Some are spent at once in direct reflex action; some are diverted for a moment to escape a little later in more complex refraction; some are absorbed into subconscious spheres where tension increases for a longer or shorter time till their energy is expended in the still higher combinations of organized habits; and some, reaching the dominion of consciousness, may be detained indefinitely. Thus, upon incessant stimulation from without, nervous vigour, capacity, and storage depend; shut off such stimulation and capacity will turn sluggish. Now if this infinite complexity of knots and strands and this flashing of shuttles were in their several actions, and in their myriad patterns of lesser and greater intricacy, to depend each and all upon the immediate direction of the mind—if for every trivial act we had to take thought, the fatigue of life, nay, the confusion of error on error would lead us on to destruction. Hence from birth we are engaged in the construction

of habits dependent, each and the various groups of them, upon branch offices endowed with more or less autonomy. Thus most actions issue from ready systems and subsystems independent in their degrees of extemporaneous dictation. "Character" consists of these subordinate constructions, and good character on the breadth and intimacy of their correspondence with the external world.

How elaborate are the acts which may thus be liberated without the immediate vigilance and device of the mind is seen in the unconscious performances of some epileptics; in the yet larger and more complete coordinations of the "absent minded"; in the incalculable dexterities of the craftsman, nay, in the apparently deliberate achievements of the man of masterly intellect who, by thought and practice, had so tuned and set the chords of his great instrument that, in time of action, his strategy is right. At critical moments the counsel of others, nay, even his own, must wait the gate of every sense must be set widely open every avenue clear, and the marvellous machine left to its own play. It is now too late to doubt, to reconstruct conceptions; such debate is for times of contemplation. The man of action must be imperturbable. A great maker, of whatsoever kind he be, knows not what he does, if we use the word "know" in the sense of fullest awareness. He acts as he has been made in the past; in the supreme moment he can only be himself, not the somebody else of his to-morrow.

A nervous centre is not a mere change-house or a mere distributor; it is also an accumulator of energy. Organs must be prepared not only for the mean demand, but also for extremes of effort and rest. It is one of the offices of "inhibition" or suspension that in

centres and systems of centres the incident energies are banked at times of rest, to be drawn upon at times of stress. By gradual enlargement of the life of the body and of its parts healthy nervous centres increase in capacity—whether for direct expenditure, mutual reinforcement, or suspension and redistribution. Such enrichment by way of expenditure has its limits; an expenditure too profuse, or, if not too profuse, too sudden to be as promptly met, may exhaust an organ even to a point beyond repair. Take an analogy: a bank may be too weak for the ordinary local claims; or at a time of crisis, if not broken by a run, it may have to strain its resources so far as to be temporarily unable to discharge even ordinary functions. So with men: in one man a certain measure of work not only achieves the immediate end but also enriches his reserve of energy; in another this measure, if it achieve the immediate end, falls short of adding to the reserve; in a third, again, the end is achieved, but at the cost of depleting the reserve; in a fourth even the end is not attained, and the reserve is not only exhausted, but also its native elasticity is so impaired that for a time it is unequal to current demands. In medical language—by a measure of work on which one man thrives another is fatigued, another is overworked, another is more or less permanently damaged in his capacity for recovery and becomes neurasthenic. Most men can be exhausted beyond the capacity of recovery by rest only by a great calamity; but a neurasthenic is not only readily exhausted by ordinary efforts, but is soon pushed beyond his capacity for regeneration.

Neurasthenia consists, not in utter exhaustion, but in lowering of nervous potential; recovery there is, but it is imperfect. Output

soon runs down. Inhibition, by which reserves are husbanded, is slackened. Output is suspended for too brief a space; inhibition, enduring as little as output, soon gives way, and energy is prematurely dissipated in "irritable weakness." Most men in time of weariness and vexation, feel this fretfulness—in their lack of self-command and self-determination. Inhibition is slack; all the functions seem to be upon the hair-trigger. This, however, is far from insanity; it may possibly lead to perversion, but simply it consists not in perversion but in poverty. Just as one may starve but still be far from stealing or even far from getting blind to the arguments against such an act. When blindness to a broad comparison of values occurs some one or more centres are not so much reduced as perverted or deleted; this is the way madness lies—in a change not quantitative but qualitative. In neurasthenia the change is quantitative; every part lacks tenacity; this or that part may be particularly weak, but the loss of mental balance is recoverable more or less, the state is remediable by rest, sleep, and good food alone. Not so insanity; in an insane person the distortion of the mind is often but the more evident in the renewed activity after sleep.

Hysteria, on the other hand, is not the snapping off of inhibition at half-cock but an untimely interference of a particular inhibition, a perpetuity of intrusive suggestion. Thus a person cannot micturate because another is looking at him, or may be looking. This disability, common as it is in healthy persons, is of the nature of hysteria. By the untimely activity of an upper centre a lower set cannot get play; an inhibition, normal at another time, is now unseasonable or excessive. Occupy in like manner a certain upper centre with the notion that the eyelids cannot be

closed (an inhibition which few men can defy) and the patient will stare till the suggestion is removed. Let a woman's mind be possessed with a belief of inability to walk, and paralytic she will be : she cannot take the brake off to set the nervo-muscular apparatus free to perform its function. A player, unused to bystanders watching him, misses an easy stroke at billiards ; he is so far hysterical that he cannot let play those substructures which he had built up with so much care. This is not exhaustion ; it is consistent with well-nourished nervous centres ; nor is control lost ; self-determination may be in defect, but certain controls (suspensions or inhibitions) are in relative excess. This meddlesome inhibition, whether due to the dislocation of shock or to the padlock of direct suggestion, is often remediable by counter-acting jar or suggestion ; or, again, by disciplinary exercises by which the habit-fabric was originally built up ; none of which measures is of service in neurasthenia.

Hypochondriasis is nearer to insanity than is neurasthenia. It consists in a fixed idea ; and a fixed idea, whether of imaginary local disease or other notion approaches delusion, and the nearer, the more the notion gains ascendancy. The complaint occupies the mind of the hypochondriac to the exclusion of better thoughts and impulses, but rarely perverts or blinds it. The mind of the neurasthenic is not tenacious enough for a fixed idea, even of disease ; he is always open to argument as to the cause or seat of his discomfort, and his confidence is to be won. Hypochondriasis is a child rather of idleness, neurasthenia of relative overstress ; the rest and isolation which in hypochondriasis feed the malady are in neurasthenia the best remedy.

THE USE OF ALCOHOL.—The November number of the *Practitioner* is devoted to the vexed question of the use of alcohol. The subject is discussed by various writers from every point of view—medical, surgical, pathological, and statistical. The result shows that the reaction against the indiscriminate administration of alcohol in acute disease—a practice which reached its climax in the system of large doses advocated by Todd—is not yet exhausted, and that the authorities of to-day assign to alcohol a field of utility more limited than ever. Sir William Broadbent regards it as definitely established that alcohol does not increase muscular force. Its so-called stimulant action is indirect, and the most conspicuous evidence of it is dilation of the arterioles and capillaries which allows freer supply of blood to all the organs. There is concomitant increased action of the heart, due partly, if not mainly, to the diminished peripheral resistance of the circulation. A temporary general acceleration of the circulation and increased afflux of blood to the brain and viscera thus constitute the action of which advantage is taken clinically. The value of stimulants in debility is greatly exaggerated, but properly employed they are useful. They should be taken only with meals, and their beneficial effect may be estimated by the increase in the amount of food taken, though this is not the only benefit. The amount of food taken should largely preponderate over the stimulant taken. A biscuit with a glass of wine should not be ordered. In acute febrile disease stimulants should never be given in the early stage, but should be withheld as long as possible, even when the patient has been addicted to alcohol. As the disease advances the indication for stimulants is not muscular prostration and weakness, still less a sense of

weakness of which the patient complains. The practitioner must be guided mainly by the pulse, and by its frequency and low tension with dicrotism and anacrotism, rather than by its apparent strength. The effects of the first few doses, both immediate and after 2 or 3 hours, interval, should be watched. If the stimulant is doing good the pulse ought to become less frequent, steadier, and longer. Another indication is the state of the tongue. When this is dry, and especially when there are sordes, alcohol does good. Again, when alcohol promotes sleep and diminishes restlessness it is beneficial; conversely, excitement, sleeplessness and increased frequency of the pulse and gastric derangement are indications to discontinue it. When stimulants are given in acute febrile disease the odour of the breath should be noticed. Usually the vinous or spirituous smell disappears with extraordinary rapidity. When, therefore, it lingers, and especially when the foul after-odour of the spirit drinker is recognised, alcohol should be withdrawn. If it becomes necessary to give it again the dose should be small, and the effects carefully watched. The amount of stimulant which can be taken with advantage varies with the disease and its severity. In typhoid fever, even in a severe case, Sir William Broadbent thinks that more than 6 oz. of brandy or whisky or the equivalent of wine are rarely required. In pneumonia, the stimulant may have to be pushed rapidly, but 6 or 8 oz. he regards as a large amount. Ten oz. daily is the maximum likely to be of service in any acute disease.

In dealing with alcohol in surgery Mr. Pearce Gould takes up a more adverse position. For many years he has almost entirely dispensed with alcohol. He thinks that the common belief that it is of special value in septic

inflammations, such as erysipelas, pyæmia, septicæmia, and hectic fever, is unfounded. In no cases is alcohol so little required as in septic cases, and there are few in which its influence is so harmful. It dries the mouth and lessens the ability to take food, while it does not strengthen the heart or arrest the disease. Experiments show that alcoholised rabbits do not withstand infection as well as others. Even in uncontrollable suppuration from large tuberculous abscesses, *e.g.*, in the late stage of sacro-iliac disease or spinal caries, Mr. Gould has found nothing but good from withholding alcohol. Even when patients had been taking it in large doses he has never seen ill effects from its abrupt discontinuance. In the treatment of shock he does not place alcohol among the primary remedies. It is not so valuable as the horizontal position, rest, heat, morphia, and, possibly, strychnine. It does not produce such striking benefit as saline injections, nevertheless, it is of some use in tiding over an emergency. It should be given in small quantities, well diluted, and be discontinued when any improvement in the pulse is noticed. It may possibly arrest a deepening collapse; it may help to initiate reaction from shock, but continued during that reaction it is harmful. It should be limited to a single dose, which may be divided or administered through more than one channel. In cancer alcohol is generally injurious. It may increase the activity of the disease and it often aggravates the pain. However, in some cases, a small quantity of well-diluted spirit is a better hypnotic than the evening dose of morphia. When there is entire distaste for food a little wine or beer may be useful.

As to the use of alcohol as a beverage the opinions expressed differ. Prof. Sims Wood-

head believes that total abstinence enabled him as a student to win prizes both in the classroom and the athletic field. He was early impressed by the fact that nearly every athlete who was not an abstainer became one during training, and sometimes had to alter his mode of life so that he could do nothing but train for football or races. On the other hand abstainers had to alter their mode of life but little, and continued their reading and classes. Dr. J. J. Ridge claims that a life-shortening effect of the continuous use of alcohol is shown by the statistics of the United Kingdom Temperance and General Provident Institution, which for 36 years has kept its insurers in two sections—abstainers and non-abstainers. In the latter, the actual mortality was 95·8 per cent. of the expected mortality; in the former, calculated on the same basis, it was only 71·2 per cent. But Dr. Ridge overlooks the fact that this difference cannot be entirely attributed to abstinence. Abstainers are generally something more—thrifty careful-living people. On the other hand, the personal experience of such men as Sir James Paget and Mr. Gladstone, who found wine necessary and beneficial, cannot be disregarded. Sir Samuel Wilkes, following the late Sir William Roberts, recognises that the desire for alcoholic drinks is a natural instinct. The personal experience of Sir Henry Thompson is of great interest. He was born in 1820. In 1855-60 he constantly suffered from sick headaches with attacks of hemicrania which occurred once in 10 days or a fortnight, usually about 9 a.m. There were also stiffness and pains in the shoulders and back. In 1869 he tried a course at Carlsbad, but it did not benefit either the hemicrania or the rheumatism. In 1873 he began to drink nothing but water. For months he suffered great discomfort and felt as if he had never dined. After 6 months he lost most of the

hemicrania and all the rheumatism. The former disappeared after ceasing to eat meat and substituting fish and birds. At the age of 75 he tried to take wine again, but could not, as it again proved injurious.

THE OUTBREAK OF FOOD POISONING IN DERBY.—The Report on the outbreak of food poisoning in Derby just issued by the Medical Officer of Health, Dr. W. J. Howarth, with the appended bacteriological report by Prof. Delépine, is a valuable contribution to the comparatively new subject of food poisoning. In the town 131 persons and outside it 90 persons became ill after eating pork pies made by a local butcher. After an incubation period of 4 to 24 hours abdominal pain, nausea, sickness, and diarrhoea occurred. The vomit and the motions were usually green, and the latter were intensely offensive. The average temperature was 101°, but in some cases 104° was attained. In the worst cases there was delirium. A constant complaint was made of extreme dryness of the mouth. The tongue was very dry and furred. When the more acute symptoms had subsided there was often difficulty in checking the diarrhoea. In a few cases there were transient erythematous rashes. Some of the older patients showed marked cardiac depression which occasionally threatened a fatal termination. Convalescence was slow and sometimes attended by desquamation. Five cases were fatal.

The pies which caused the outbreak were all baked on one day. Examination of specimens showed no evidence of putrefaction. But the jelly had a peculiar appearance: it was less transparent than usual and under the microscope was seen to contain many colonies of bacteria. These colonies were of various sizes, some of them were just visible to the

naked eye as white specks. Cultures yielded several kinds of bacteria. The most important was a bacillus, resembling the bacillus enteritidis of Gaertner, another having the character of the bacillus coli communis was also abundant, and there were a few colonies of proteus. Guinea pigs fed with the pork pies lost weight and died in from 36 hours to 3 days. From the intestine, heart-blood, and organs bacilli were isolated, closely resembling the bacillus enteritidis of Gaertner, and others having the characters of the bacillus coli communis. The latter were, however, present only in a few cultures, whilst the bacillus enteritidis was abundant in all. In one fatal case the former bacillus was found in the blood, and in another in the stomach. The blood of 4 patients suffering from pork-pie poisoning did not yield the bacillus but it agglutinated cultures of the bacillus. Blood obtained after death in the fatal cases also gave the agglutinative reaction. In all the fatal cases there was evidence of septicæmia. But as he could not isolate the bacillus from the blood of 6 non-fatal cases, Prof. Délepine infers that it may produce only gastro-enteritis. In young broth culture the bacillus was very motile and closely resembled the typhoid bacillus, assuming the form of small rounded bodies, short rods, or long filaments. The jelly of ordinary pork pies and also some jelly from a pie obtained from the same shop a week after the outbreak did not contain any bacillus of the kind. By simple microscopic examination it is therefore possible to surmise whether a pork pie is likely to produce this form of poisoning.

Several similar outbreaks of food poisoning have been recorded—by Dr. Ballard and Dr. Klein (*Local Gov. Rept.*, 1880-81 and 1890-91), by Dr. Durham ("REVIEW," Vol. II., p. 44), by Dr. Gordon (*Practitioner*, 1902), and by others.

The outbreak investigated by Prof. Gaertner of Jena, in 1888, was the starting point of the investigation of this form of food poisoning. It was due to the consumption of the flesh of a cow which was suffering from diarrhoea when slaughtered. The meat was of normal appearance. Among the persons who partook of it some ate it uncooked. They became ill, and one died 36 hours after the meal. From his spleen and from the flesh of the cow Gaertner isolated a bacillus which he called bacillus enteritidis. Karlinski states that Gaertner's bacillus can be found in the intestine of human subjects and animals apparently not suffering from any disease, and that it is widely distributed in nature. If this be so its virulence is extremely variable. In the absence of a full description of the bacillus isolated by Gaertner in 1888, Prof. Délepine could not affirm the identity of the Derby outbreak with it. They appear to be more or less closely allied to the bacillus coli communis—a common inhabitant of the intestines.

How were the pies contaminated? As other portions of the carcasses than those used in the pies were not poisonous, disease of the flesh of the pigs was excluded. In the chopping house a bowl containing the minced meat stood on the floor uncovered near a tub containing the intestines. The latter were cleaned, turned inside out and scrubbed with an ordinary yard brush, which in turn was used for brushing the floor. If any of the animals were suffering from an intestinal infection by the bacillus responsible for the outbreak the risk of contamination of the chopped meat is obvious. The temperature of a baked pie at the centre was found to be 47·2°C. The bacillus enteritidis is not killed by exposure for many hours to a temperature of 47°C. The

colonies were most abundant in the small amount of jelly at the centre of the pies. On the surface of the lumps of meat were numerous groups of bacteria, which penetrated the muscular tissue to only a slight extent. Hence it was concluded that superficial contamination of the chopped meat of faecal origin was the most probable source of infection. The necessity of regulations to enforce precautions against such contamination are obvious.

ICE CREAM POISONING.—Several cases of ice cream poisoning in London reported by Dr. Collingridge, Medical Officer of Health of the City of London, are of interest in connection with the Derby outbreak, as they appear to be due to an allied organism. Eighteen boys in the telegraph department of the General Post Office became ill in July after eating ice cream. The symptoms were colicky pains, headache, nausea, nervous depression, and in some cases vomiting and diarrhoea. In samples of ice cream Dr. Klein found a highly virulent variety of bacillus coli which was not the bacillus of Gaertner. This bacillus was found in a succession of samples made on different days by the same maker under very insanitary conditions as to locality, manipulation, and storage. When these insanitary conditions were amended the ice-creams proved harmless to animals. A law has been passed regulating the conditions under which ice creams are manufactured.

THE HISTORY OF SYPHILIS.—In a lecture delivered at the London Hospital and published *London Hospital Gazette* for Sept., Mr.

Jonathan Hutchinson points out that the discovery of America by Columbus at the end of the 15th century was synchronous with the introduction of syphilis into Europe. Syphilis was first known in Italy, and was for a time termed the "Neapolitan disease." Later it became known in France, and subsequently was called "the French disease," and still later it spread widely, taking a northerly course. It must have been a new disease in Europe, for there are no previous records of any malady resembling it. Neither Chaucer nor Boccaccio mentions it, so it probably was not known to them. Even the medical writers of those times say nothing about it. The earlier references to diseases of its kind are very vague. Yet a century later Shakespeare and Ben Johnson knew all the symptoms of syphilis. When it reached England it spread very rapidly. It was, however, at first not recognised as specially a venereal disease.

Mr. Hutchinson does not think that syphilis came first into Europe with Columbus, but that it probably came some few years earlier. It had reached Italy and even France within a year after Columbus' return. It could not have spread so far in so short a time. Certainly Columbus met with it in the West Indies, but probably it was imported into Europe yet earlier from the West Coast of Africa, where there was the disease called "Yaws," which is characterized by similar phenomena, and which is, according to Mr. Hutchinson, the same malady. Syphilis, under other names, has probably existed from time immemorial in China, Ceylon, India, and in many other places. In Fiji and some other islands of the Pacific it is also indigenous.

LEADING ARTICLES.

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Intraperitoneal Hæmorrhage from Ectopic Pregnancy.

By CHARLES J. CULLINGWORTH, M.D.,
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Whether blood poured out into the peritoneal cavity becomes encysted or remains free depends chiefly on the extent and rapidity of the hæmorrhage.

DIFFUSE INTRAPERITONEAL HÆMORRHAGE.—If the hæmorrhage is considerable and rapid, as when large vessels are torn, there is not time for the blood to become surrounded with a wall of adherent viscera or a capsule of adventitious tissue and laminated fibrin; it escapes into the peritoneal cavity and is diffused amongst the viscera. Such diffuse hæmorrhage during the child-bearing age is usually due to ruptured ectopic gestation. The symptoms are those of a sudden abdominal lesion plus those of severe internal hæmorrhage. The first symptom is sudden and severe abdominal pain, which is often accompanied by vomiting. The abdomen is often more or less distended and rigid, and it becomes excessively tender. The usual signs of collapse are soon followed by increasing pallor. The pulse rises and becomes weaker and more compressible. Presently it is only now and then perceptible, and finally not at all. The patient feels more and more faint; her pain perhaps abates; she becomes restless; sometimes she vomits; often she sighs deeply and yawns. If untreated she gradually sinks, remaining conscious to the last. Rarely, the bleeding stops, the patient rallies, and, if no fresh outburst

occurs, the blood becomes gradually absorbed and she recovers. Most cases end fatally within 48 hours. One case known to the writer proved fatal within 3 hours.

The points to be relied on in diagnosis are as follows :—(1) At the moment of the attack the patient is in her usual health. This renders gastric or intestinal perforation or rupture of an internal abscess or suppurating cyst very improbable. (2.) The gradually increasing pallor and pulse-rate without corresponding rise of temperature. (3.) The extreme tenderness of the abdomen. This symptom is of special value. It often misleads the practitioner into supposing that there is acute general peritonitis. But even great abdominal tenderness does not necessarily indicate peritonitis. It is found, for instance, over ovarian tumours which from rotation of the pedicle have become the seat of hæmorrhages, intracystic and intramural. (4.) If a menstrual period has been missed the diagnosis is facilitated; but regular menstruation does not exclude rupture of an ectopic gestation. Some of the most appallingly sudden cases occur at an early stage of the pregnancy, even before a single period has been missed. If in addition to the arrested menstruation there is morning sickness the diagnosis is further facilitated. But these signs of early pregnancy do not prove much.

It is frequently stated in text-books that intra-abdominal hæmorrhage gives the usual signs of free fluid in the peritoneal cavity. Extensive effusion in a thin patient may give fluctuation and dulness in the flanks, shifting on change of posture, but such is not usually present. Vaginal examination does not give

very definite signs, no distinct circumscribed swelling is felt, as in the case of encysted effusion (pelvic hæmatocele). All that can be made out is, in the words of Mr. John W. Taylor, "a full and boggy condition of the pouch of Douglas, suggestive, to the experienced finger, of fluid or semi-clotted blood within the pelvis, but the symptoms of lethal hæmorrhage are more important." There is often a slight hæmorrhage from the vagina. Owing to the gradual subsidence of the pain, and the patient's freedom, as a rule, from alarm, the gravity of the condition may easily be overlooked. As Mr. Taylor points out, the medical attendant more frequently fails to appreciate the danger than makes an incorrect diagnosis.

NON-DIFFUSE OR ENCYSTED INTRAPERITONEAL HÆMORRHAGE (PELVIC HÆMATOCELE).—Most cases of pelvic hæmatocele are probably due to ectopic gestation. Pelvic hæmatocele is characterised by irregular uterine hæmorrhages, by attacks of pain, often accompanied with vomiting and the development of a circumscribed swelling, limited to the region of the uterine appendages on the affected side, or occupying the posterior part of the cavity of the pelvis, and encroaching upon the lower abdomen. The hæmorrhages and the pain are almost equally constant symptoms. Out of 30 cases both pain and hæmorrhage were present in 25, hæmorrhage without pain occurred in 2, and pain without hæmorrhage in 3. When both symptoms are present their onset may be simultaneous, but either may precede the other by periods varying from a few hours to several days. The appearance of the decidua in the vaginal discharges helps to confirm the diagnosis, but it often escapes observation. This membrane may be expelled either entire or in fragments. It differs from that expelled in membranous dysmenorrhœa only in being thicker, and in

its expulsion being an isolated, not a periodical phenomenon. The pain usually is sudden in onset, and at first is severe. It soon abates, and in a few hours may pass off altogether. It not unfrequently follows some strain. Its ordinary situation is one or other iliac region. It often recurs, apparently from fresh internal hæmorrhage. Amongst the less constant symptoms are faintness (which occurs in about a third of the cases), nausea and vomiting (in about a sixth), rise of temperature (in about the same proportion) and retention of urine (in 2 cases out of 30). The vomiting is most misleading. It is constantly accepted as proof that the mischief is in the appendix vermiformis, or, at any rate, that it is intestinal. At least temporary rises of temperature are rarely absent and sometimes the rise extends to several degrees. In one case in which the patient was under observation for 5 days before operation, the temperature was never below 99.6° , and it was generally much higher, frequently reaching 102° , and on several occasions 103° . Yet there was only an ordinary hæmatocele with the usual amount of adhesive peritonitis. It is remarkable that this rise of the temperature has not received attention. Its non-recognition leads to many cases of tubal gestation with hæmatocele being erroneously diagnosed as pelvic peritonitis. The abdominal pain, extreme tenderness, and distension tend further to mislead. As in diffuse intraperitoneal hæmorrhage the diagnosis will be much facilitated if the patient is known to have missed one or more menstrual periods.

In a typical case of pelvic hæmatocele the swelling is said to be central and symmetrical; but few cases correspond with the text-book description. The ordinary condition found on bimanual examination is an irregular, tender, fixed swelling, usually at first of the consis-

tence, in the greater part of its extent, of soft blood-clot, but sometimes of almost entirely fluid consistence, situated behind the uterus, which it pushes forward and perhaps to one side, distending Douglas's pouch, depressing the vaginal vault, bulging into the rectum and extending laterally into, and filling more or less completely, one or other of the posterior pelvic fossæ. If the quantity of blood effused is at all considerable the swelling reaches upwards into the abdomen, often considerably higher than the fundus uteri, and not infrequently nearly to the umbilicus. The upper limit is usually higher on one side than on the other, and is irregular, owing to the adherent viscera that help to form its roof. The outline is difficult to make out at first, owing to the general abdominal distension, rigidity, and extreme tenderness. But in a few days these conditions are altered. At the same time the peripheral portion of the mass probably becomes hardened and better defined, owing to the deposit, upon the inner surface of the wall of the sac, of layers of fibrin. The uterus itself is generally a little enlarged as well as displaced forwards, and is adherent posteriorly. A pulsating vessel may often be felt in one or both of the lateral fornices of the vagina. Often one part of the swelling feels more or less hard and nodular, usually the lower surface of the lateral portion. This irregular hardness is caused by the thickened, distorted, and adherent uterine appendages, or other pelvic viscera, forming part of the enclosing wall. Sometimes the swelling is even more lateral, and Douglas's pouch is empty. For the position of a hæmatocele depends not so much upon gravity as upon the position of the Fallopian tube when it is formed.

The conditions for which pelvic hæmatocele is most frequently mistaken are retroversion of the gravid uterus, abortion, inflammation of

the uterine appendages with or without a new growth, and unsuspected ovarian cyst with sudden twisting of the pedicle. A fixed mass in Douglas's pouch of the size of the pregnant uterus at the end of the third month, amenorrhœa, and perhaps other symptoms of early pregnancy suggest retroversion of the gravid uterus. If retention of urine—a rare symptom of pelvic hæmatocele—be present, the mistake is still more probable. The history of severe attacks of pain, with more or less persistent hæmorrhage from the vagina, should put the observer on his guard. If the uterus can be clearly made out to be but slightly enlarged, and to be lying in front of the swelling the case is obviously not one of retroversion. But, as the use of the sound is contraindicated and as without it there is often difficulty in deciding whether the smaller body felt in front of the swelling is the entire uterus, or is merely the sharply-defined, hard, and perhaps elongated cervix of a pregnant and retroverted uterus, of which the body is comparatively soft and flaccid, this sign is not always available. If the swelling be fairly soft and well defined in outline it is almost certainly not a hæmatocele, and if it can be felt alternately to contract and relax it must be the pregnant and retroverted uterus. The distinction is important, for there is always the liability in pelvic hæmatocele to fresh hæmorrhage with giving way of the hæmatocele and the escape of blood into the general peritoneal cavity. Nothing is more likely to bring about such a disaster than manipulations to elevate the mass, under the supposition that it is a retroverted pregnant uterus.

Cases in which a disturbed tubal pregnancy with hæmorrhage and hæmatocele is mistaken for abortion are probably more numerous than those in which it is mistaken for a retroverted gravid uterus. The latter is the

mistake of the painstaking practitioner, who at least takes the trouble to make a vaginal examination. The former is the blunder of the routinist with too many patients. He hears of a missed period, of irregular hæmorrhage, and of attacks of pain, and, without examination, he diagnoses threatened abortion. Presently some portions of membrane are passed. Not finding an embryo and the attacks of pain continuing, he thinks that the ovum has not entirely come away. And so the case passes unrecognised until some more serious attack alarms both practitioner and patient. Then examination reveals the abnormal pelvic swelling. The point of difference is that in abortion there is almost always much hæmorrhage and clots are passed—phenomena seldom present in disturbed ectopic gestation. Moreover, in abortion the discharge is often copious, fitful, and variable in colour and consistence. Gushes of bright red blood are frequent and alternate with the passage of clots. In hæmatocele the discharge is more uniform. It is for the most part dark, moderate in amount, thick while it lasts, and steady in flow, though occasional gushes of bright red blood may occur.

Inflammatory conditions, suppurative or non-suppurative, of the uterine appendages, especially if associated with enlargement of the ovary from early cystic disease, often simulate pelvic hæmatocele. The suspicion is possibly confirmed by the amenorrhœa. But there is usually a history of past or recurrent attacks of pelvic inflammation, of chronic pelvic pain, or of a purulent discharge.

Mr. Taylor has called attention to the similarity of the symptoms of pelvic hæmatocele and those of an ovarian cyst with intracystic hæmorrhage from twisted pedicle. The sudden abdominal pain, which characterizes the final twist of an ovarian pedicle when

the return circulation is obstructed, the vomiting and faintness which accompany this, and the rapid formation of a prominent and tender tumour, all suggest a tubal pregnancy with hæmatocele, and when accompanied (as axial rotation of an ovarian pedicle sometimes is) with menstrual irregularity, the history also may favour the suspicion. When a tumour is known to have existed the diagnosis is comparatively easy. But in many cases the tumour has not been suspected. In differentiation, Mr. Taylor places chief reliance upon the fact that an ovarian tumour is seldom so closely connected with the uterus as a tubal pregnancy. To this difference the writer adds another: in twisting of the pedicle a tumour can be at once found and be observed quickly to increase in size; in tubal gestation with hæmatocele a tangible tumour is not formed at once. Usually a swelling cannot be made out for a few days.

Only recently has the etiology of pelvic hæmatocele been explained. The subject was nebulous until Lawson Tait recognised that the vast majority of pelvic hæmatoceles, like diffuse intraperitoneal hæmorrhages, were due to ectopic pregnancy. For some time both forms were held to be invariably due to rupture of the gestation sac. But observers, particularly Werth and Bland-Sutton, have recently found that hæmorrhage within and around the ovum frequently precedes the rupture. Later it was found that intraperitoneal hæmorrhage from ectopic gestation might occur without rupture, the blood escaping, not through a rent, but from the orifice of the pregnant tube. Eventually it was found that whereas diffuse intraperitoneal hæmorrhage is usually due to tubal rupture, and only occasionally to leakage from the open fimbriated end of the tube, the encysted form of intraperitoneal hæmorrhage, or pelvic

hæmatocele, is most frequently due to leakage from the mouth of the tube, and only seldom to rupture. Up to very recently every ectopic gestation was supposed to begin in the Fallopian tube. But within the last few years several indisputable instances of ovarian pregnancy have been recorded. Nevertheless, with few exceptions, an ectopic gestation means a tubal gestation. The fertilized ovum may be arrested in any part of the Fallopian tube. The arrest takes place most frequently in the wider or more curved portion (ampulla), but it may also occur at the fimbriated end (infundibulum), or, more rarely, in the narrow, straight portion at the uterine end (isthmus); or, most rarely of all, in that part of the tube which passes through the uterine wall. The fate of the ovum is largely determined by the site of the gestation. When it is arrested within the uterine wall or immediately outside the uterus early death appears to be all but inevitable. In the middle and outer portions it usually succumbs to one or other of the dangers that threaten it, rarely does it develop long enough for the fœtus to become viable, and still more rarely to reach term. Wherever the fertilized ovum lodges there is produced a general hyperæmia of the pregnant tube and of the parts connected with it, all the vessels of the neighbourhood enlarging. The tube wall usually becomes attenuated as it is expanded by the growing ovum. Though everywhere in contact with the tube wall the ovum becomes attached only over a limited area, which forms the site of the future placenta, the chorionic villi, which at first completely surround the ovum, becoming specially developed there, and penetrating the tube wall even to its outer coat. The result is that the muscular fibres become separated, and the tube wall becomes weakened. The separation of the muscu-

lar fibres is still further increased by an infiltration of large nucleated cells. Meanwhile a decidual membrane is formed in the uterine cavity, and the uterus enlarges. This enlargement continues, if the ovum lives, for the first 2 or 3 months much as it would do if the gestation were intra-uterine. But about the end of that time the uterus appears to find out that it has been cheated, and ceases to grow, though, as long as there is a living and growing ovum in its neighbourhood, it does not undergo involution.

Rupture of the gestation sac is specially apt to occur at the spot where the tube wall is weakened and thinned. Cases have been observed in which nothing intervened between the ovum and the peritoneal covering of the wall but a little newly-organised connective tissue. One case is described in which a partially organized blood-clot lying in the intervillous spaces, and covered by peritoneum, was all that remained to represent tube wall at the seat of rupture. A little extra strain upon the capacity of the intervillous spaces containing the maternal blood, or an interstitial hæmorrhage, suffices to bring about a catastrophe. The ovum is specially prone to become the seat of hæmorrhage, and thereby to have its bulk enlarged and its vitality destroyed. Sometimes the result is the formation of something so like the well-known carneous mole of uterine pregnancy that it may be termed a tubal mole. More frequently the amniotic cavity is so much compressed by the hæmorrhagic effusion between the membranes that it is flattened and practically obliterated, the embryo being destroyed, and the ovum, whilst retaining its shape and often retaining its attachment, becoming a mere mass of clot and débris. Sometimes the covering of the ovum gives way, and the tube becomes filled with clot and débris, all trace of ovum being lost. The

sudden increase in the bulk of the ovum due to this hæmorrhage is often a factor in the bringing about of rupture. But hæmorrhage into the ovum does not in the majority of cases produce rupture. The more usual result is a trickling of blood from the abdominal end of the Fallopian tube. Such a trickling exactly fulfils the conditions necessary to the formation of hæmatocele. The blood flows so slowly and in such moderate amount that it has time to collect in the pelvis and to become encysted. But in exceptional cases the blood flows fast and furiously, producing a diffuse intraperitoneal hæmorrhage.

The capsule of a typical pelvic hæmatocele is formed partly by the peritoneal surfaces of the surrounding parts—broad ligament, uterus, ovary, appendages of the opposite side, intestine, omentum, and the walls and floor of the pelvis—and partly by an adventitious cyst wall. This latter bridges over the gaps between these various structures. Sometimes the whole hæmatocele is surrounded by such a cyst wall, which intervenes between the contents of the hæmatocele and the visceral and parietal peritoneum hemming it in, and, if not too fragile, enabling the hæmatocele to be enucleated entire. Where non-adherent the cyst wall is smooth on its outer surface. It consists of a delicate connective-tissue basis, upon which successive layers of fibrin have been deposited from within. It becomes firmer and harder day by day.

The abdominal end of the tube is differently affected according to whether the ovum has lodged in the inner or outer part of the tube. When the isthmus of the tube is the seat of the gestation the fimbriated mouth of the tube is sufficiently far off to remain, as a rule, unaffected. But in the much more common

event of the gestation occurring in the outer portion of the tube the abdominal ostium remains open until from the sixth to the eighth week, and sometimes becomes abnormally expanded. After this it usually becomes closed, or nearly closed, by adhesions. A hæmatocele is most apt to be formed during the first 2 months of gestation, for then hæmorrhage within and around the ovum is most liable to occur, and, the abdominal ostium remaining patent, the blood extravasated around the ovum usually finds vent in that direction. But, owing to the changes in the tube wall, rupture not infrequently occurs while the abdominal ostium is still open, and the bleeding may occur both from rupture and from the mouth of the tube. Under the pressure of recurrent hæmorrhages, or from an undue strain the sac of a hæmatocele may give way, bleeding take place into the general peritoneal cavity, and encysted hæmorrhage be converted into the more dangerous diffuse hæmorrhage. This should be borne in mind during bimanual examination, especially when this is conducted under anæsthesia. The writer has seen several cases of this accident.

The tendency of a pelvic hæmatocele or of a diffuse, but non-fatal, intraperitoneal hæmorrhage is to gradual absorption. But there are dangers in the way. The most important are the liability to fresh hæmorrhages and to bacterial infection. Whenever an apoplectic ovum is retained and adherent within the Fallopian tube, a woman is exposed to the constant risk of recurrent hæmorrhages. Occasionally the ovum becomes separated from the tube wall and is expelled with the stream of blood that issues from the open mouth (complete tubal abortion).

JOUR. OF THE AMERICAN MED. ASSOC.,

Oct. 25, p. 1019.

Removal of the Appendix when the Abdomen is Opened for Other Reasons.

By HOWARD A. KELLY, M.D.

The importance of the vermiform appendix in pelvic surgery was suddenly brought to the writer's attention by a patient who came under care in Dec., 1894, with general pelvic discomfort and painful menstruation. A median abdominal incision revealed a retroflexed uterus, adherent ovaries, and a relaxed vaginal outlet. The uterus was suspended, varicose ovarian veins were ligated, and the vaginal outlet was repaired. The patient was little if at all improved. Some months later she had an attack of appendicitis, for which she underwent operation with complete relief of all her symptoms. Evidently the appendix was the source of her troubles. Since then the writer has never opened the abdomen without examining the appendix, whenever it was possible to do so without enlarging the incision or running the risk of conveying infection to healthy structures. In a series of 115 cases he found the appendix adherent to the right tube or ovary in 10, involved in adhesions in 37, congested in 3, and obliterated at the base in 1 case. Only 64 appendices were normal.

Is it advisable to remove the apparently normal appendix whenever the abdomen is opened for other reasons; or whenever an incision is made in the right lower quadrant? The writer, like the majority of American surgeons, never removes the normal appendix during an operation performed for other reasons, but he always removes it if it is even slightly adherent to other organs, or if, though free, its length exceeds normal. His reasons for not removing the normal appendix are as

follows: (1) Its removal involves a slight additional risk, for no matter how good the patient's condition, shock may ensue and the additional 5 minutes consumed in the removal of the appendix lessens the chances of recovery. (2) The importance of removing the normal appendix as a prophylactic measure cannot be estimated, for statistics have not yet shown that there is a definite *per mille* risk, either of death or of serious disease in retaining the organ. (3) The fact that the appendix has no known function does not prove that it is functionless. Dr. Robert Abbe thinks that the perfectly normal appendix never contains fæcal concretions. They are frequently present, however in appendices normal in appearance. Any appendix in which concretions can be felt should be removed, even though it appears healthy.

The question is occasionally raised whether the appendix ought not always to be removed when operations are performed in the neighbourhood of the cæcum which might give rise to adhesions. In men the risk is inconsiderable, but in operations on the uterus or right ovary the appendix may become adherent to the fresh wound. Five such cases have been observed by the writer. In all the appendix was subsequently removed. In 4 cases the appendix became adherent to the stump of the right ovary and in one to the wound in the uterus caused by a myomectomy. Whenever the right ovary is removed the raw stump should be protected by covering it with peritoneum and burying it out of sight. An appendix which hangs free from the end of the cæcum and is long enough to reach the field of an adjacent operation is liable to become adherent and thus become the source of appendicitis. The writer therefore in all right-sided pelvic operations, removes long free appendices.

MEDICAL CHRONICLE, Aug., p. 302.
The Early Diagnosis of Locomotor Ataxy.

By R. T. WILLIAMSON, M.D., F.R.C.P.

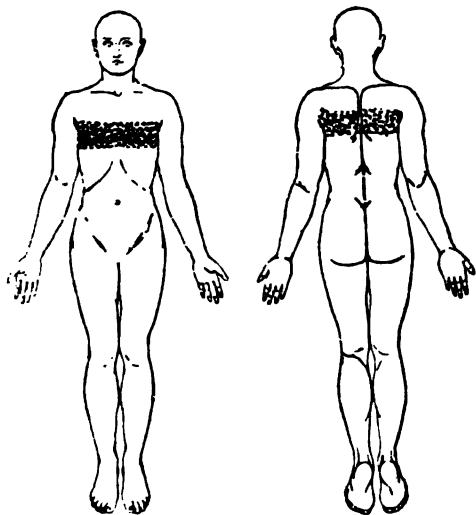
At the early stage of locomotor ataxy and in cases in which most of the characteristic symptoms are absent the disease may not be recognised for a long time. Early recognition is important because it allows an attempt to be made to check the disease by rest, change of habits, etc. In early cases with 2 or 3 symptoms the disease is often not diagnosed because it is not thought of. Thus for many months a patient had attacks of vomiting which were never recognised as gastric crises. The diagnosis should never be based on one symptom. Shooting pains in the legs may be only rheumatic. The opposite mistake of attributing the pains of tabes to rheumatism is often made. Three symptoms together justify the diagnosis of early tabes—(1) shooting pains, (2) absent knee-jerks, and (3) Argyll-Robertson pupils. Even when only 2 of these symptoms are present, especially (3) and (2) or (3) and (1), the diagnosis is very probable.

The first symptom which attracts the patient's attention may be attacks of vomiting (gastric crises), failure of vision from optic atrophy, double vision from paresis of ocular muscles, slight bladder troubles, or painless joint disease (Charcot's joint disease). Any of these should arouse suspicion, and lead to careful examination for others. The combination of primary optic atrophy or gastric crises with loss of the knee-jerks renders the diagnosis exceedingly probable, and if there be a history of shooting pains also the diagnosis is practically certain.

Absence of knee-jerks is of great importance. Before concluding that the knee-jerks are absent try the method recommended by Jendrassik and Buzzard:—The

patient is seated on a chair, with his feet in contact with the floor, and the knees are bent to a little more than a right angle. He is made to look upwards, to link his fingers together, and to pull tightly. The observer then places one hand on the rectus femoris muscle and strikes the patellar ligament with a percussion hammer or stethoscope. If the slightest knee-jerk be present a contraction of the rectus muscle will be felt. Absence of the knee-jerks is a very early sign. But in rare cases the knee-jerks are present at first, though other symptoms point to tabes. In these cases, as Sir Wm. Gowers points out the diagnosis is only justifiable when there is characteristic incoordination. In one case observed by the writer knee-jerks were present for 16 months, but the other symptoms—ataxia, Romberg's symptom, shooting pains, optic atrophy, etc.—pointed clearly to tabes.

The tendo-achillis reflex is usually absent. It may be so in the rare cases in which the knee-jerks are present, when its loss is of diagnostic value. In the case just referred to the tendo-achillis reflexes were lost though the knee-jerks were present. In another case both tendo-achillis reflexes were absent but one knee-jerk was present. The Argyll-Robertson pupil is a most valuable sign, but it is not invariably present. An important aid in early diagnosis are zones of diminished tactile sensation on the trunk which are very common. The patient is usually ignorant of this sensory affection until specially tested. The areas of diminished tactile sensation are in the form of bands or girdles round the trunk (Fig.), and they correspond to the distribution of spinal nerve roots. They may be bilateral or unilateral. In testing for them Frenkel recommends that the tip of the finger should be employed, warmed if necessary by hot water, so as to have the same temperature as



the patient's skin. The touch should be as light as possible and corresponding parts should be compared. The region supplied by the mid-dorsal nerves (level of 4th intercostal space) is the part most affected. In advanced cases the diminished tactile sensation extends down the inner side of the arm and forearm.

Muscular hypotonus, or loss of muscular tone, is sometimes of service in early diagnosis. The patient frequently can move the joints to an abnormal extent. A healthy person lying horizontally on a couch with the knee fully extended cannot raise the leg to more than an angle of 65° to 75° with the horizon. If raised higher the knee must be flexed, owing to the resistance offered by the semi-membranosus, semi-tendinosus, and biceps. In tabes, even at the early stage, the leg can often be raised to an angle of 80° , 90° , or 100° . Thus in one case optic atrophy and loss of knee-jerks pointed to tabes, and this diagnosis was confirmed by the muscular hypotonus. In other cases described by the writer muscular hypotonus was of value in confirming the diagnosis of tabes. In many cases of early tabes the writer has noted the ease with which

the patient, owing to muscular hypotonus, can stoop down and touch his toes with his fingers, the knees being kept fully extended.

The earliest indication of ataxia is of great importance, but the diagnosis can usually be made before it develops. The ataxia of tabes is more marked, and can be first detected, when the patient's eyes are closed.

Optic atrophy is sometimes a very early sign. In many cases the resulting failure of vision is the first symptoms which attracts the patient's attention. Optic atrophy may be the only symptom; often for a long period few other symptoms are present. It may be many years before ataxia develops. When the patient becomes blind the special symptoms often cease to progress.

LONDON HOSPITAL GAZETTE, Oct., p. 55.

The Causation of Glenard's Disease.

By ARTHUR KEITH, M.D.

In one out of every 10 or 12 subjects in the dissecting room the abdominal viscera do not occupy their normal position but are displaced downward, the liver and stomach usually more than the other organs. This condition is called splanchnoptosis or "Glenard's disease." To Glenard belongs the merit of recognising that ptosis and distorsion of the liver, displacement and elongation of the stomach, movable kidney and spleen, sinking of the intestines, certain herniæ, and prolapse of the pelvic viscera are all part of one condition. Dr. Keith's investigations show that the diaphragm plays a most important part in the production of Glenard's disease. The position of the diaphragm varies greatly in different persons. Thus out of 35 male subjects the writer found that the level of the right dome was at the third rib or space in 1

case, at the fourth in 13, at the fifth in 18, and at the sixth in 3. The last 3 cases were examples of Glenard's disease. Out of 15 female subjects the level was at the fourth rib or space in 8, at the fifth in 6, and at the sixth in 1. Two were examples of Glenard's disease. After death the position of the diaphragm is approximately that of complete expiration. In the living a similar variation in the position of the diaphragm was found. Examination of 3 young men by the X rays showed that the position varied to the extent of a space and a half.

The diaphragm has a triple action—on the abdomen, the thorax, and the ribs. If the thoracic and abdominal cavities were empty contraction of the diaphragm would pull the abdominal ends of the lower 6 ribs towards its origin from the lumbar spine. But the abdominal viscera prevent this. They project well within the thorax, carrying the diaphragm upwards over them like a hood (Fig. 1). The first efforts of the diaphragm are spent on the abdominal viscera: it pushes the liver, stomach, spleen and kidneys forwards and downwards against the muscular walls of the abdomen, the passive resistance of which it has to overcome. The second action of the diaphragm is to cause the lungs to descend downwards and forwards and by the attachment of the crural fibres to the inferior vena cava and pericardium, to draw the whole heart and roots of the lungs with it. The X rays show the heart, shaped like a cone, resting on the diaphragm as a base. The descent of this cone on inspiration increases the pulmonary capacity of the chest. The third action of the diaphragm may be thus explained:—From its fixed spinal origin it passes vertically up behind the abdominal viscera, to the extent of 4 or 5 vertebræ, then it turns forwards over the

liver, stomach and spleen, and then downwards in front of them. The action on the ribs depends on the amount of resistance offered to the descent of the diaphragm by the abdominal contents. If the abdominal wall is muscular and strong, and resists the descent of the abdominal contents, the force of the diaphragm is exerted on the ribs. The abdominal contents become a pulley over which the spread out insertions of the diaphragm pulls up the costal margin. The cartilages of the lower 6 ribs are pulled upwards, and owing to the manner in which the ribs are articulated with the spine, outwards, thus increasing the breadth and depth of chest.

VARIATIONS IN THE MODE OF BREATHING.—In no two persons are these three actions performed equally. Thus the X rays showed on forced inspiration that in one man the domes of the diaphragm scarcely descended an inch, and his heart and central tendon only a little more than half an inch, while in two others the movements were respectively 3 in. and $1\frac{1}{2}$ in. In these two the abdominal movements were much greater, while the thoracic were much less than in the first man. The explanation of the difference is that the first man took athletic exercise and had therefore more resistant abdominal walls than the others. Hence it follows that if from any cause the abdominal wall is weakened the diaphragm will overcome it, and push the viscera farther and farther downwards and forwards against the yielding recti and obliqui, at the same time dragging the thoracic viscera after it. The danger is increased if the abdomen becomes distended with fat or fluid. Nature then "undoes a stitch or two" in the lower part of the wall.

THE INFLUENCE OF CORSETS.—Glenard's disease is 3 or 4 times more common in

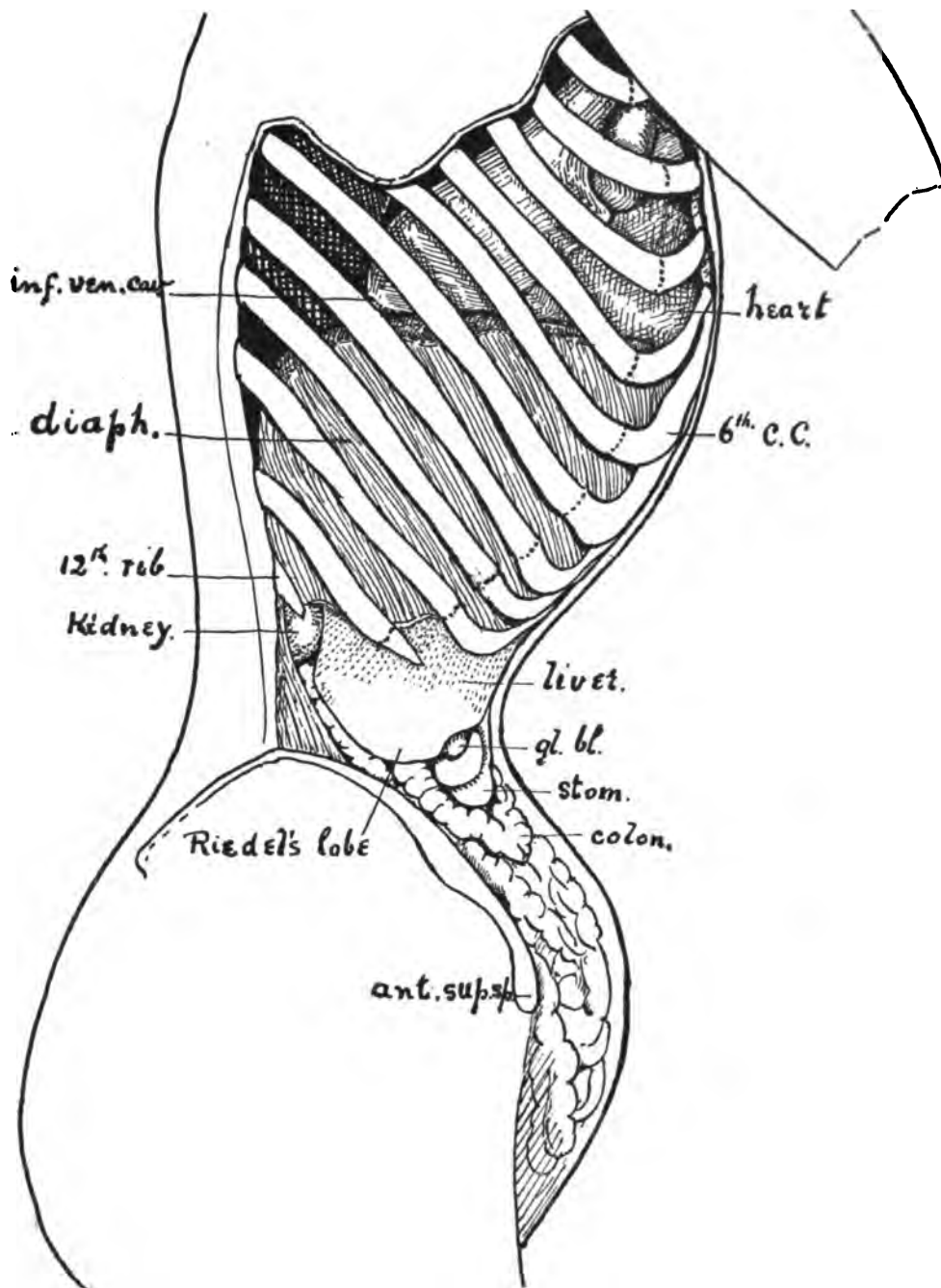


FIG. 1.—Showing the position of the viscera of the right side in a female body hardened in corsets. The direction of the fibres of the diaphragm is shown. It will be seen that they tend to push the liver as much forwards as downwards.

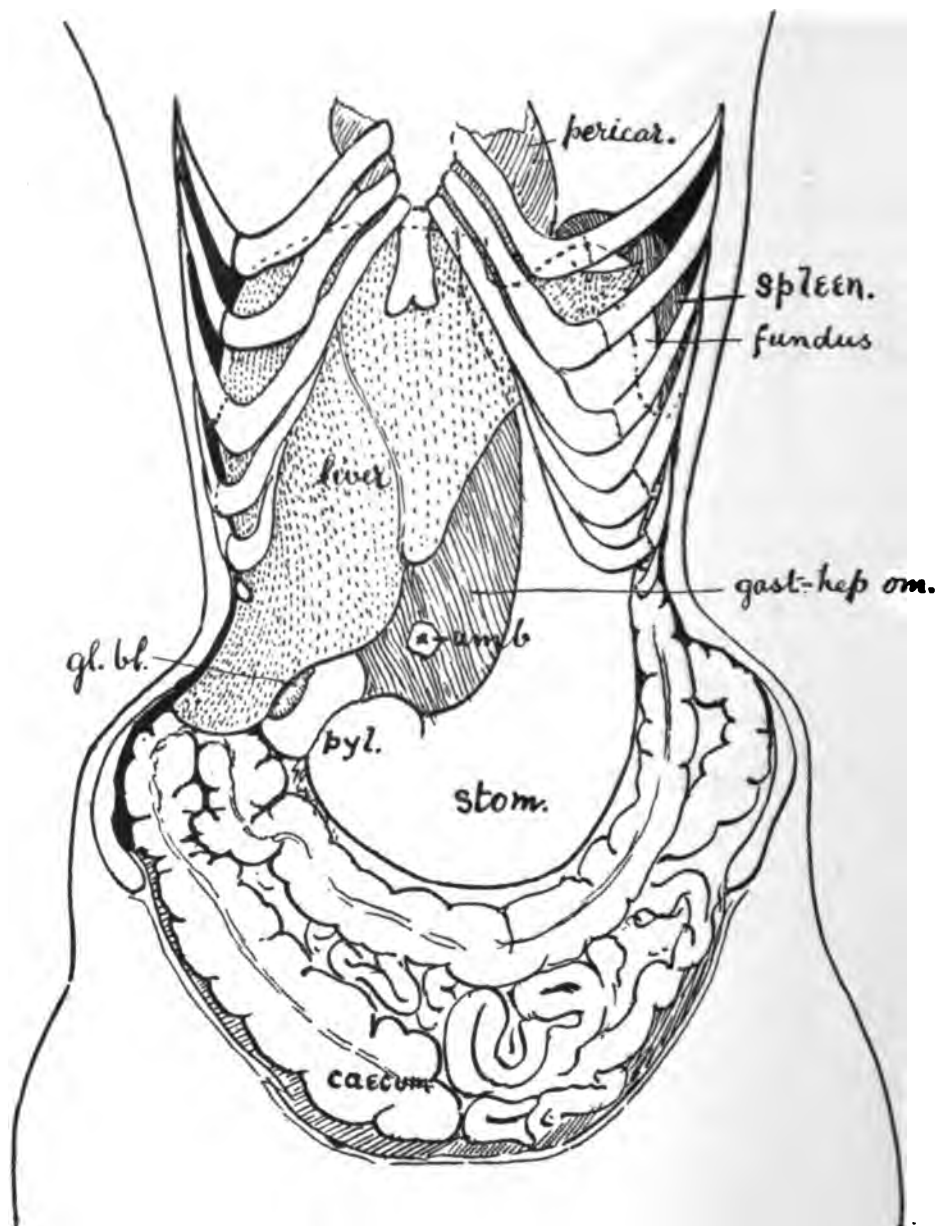


FIG. 2.—The same subject as is shown in Fig. 1, viewed from the front.

women than in men. As their respiration is costal in type the diaphragm exerts its influence mostly on the ribs, and the abdominal viscera move but little. Figs. 1 and 2 were obtained from the body of a middle-aged woman who had evidently worn stays during life. Before injecting formalin, for the preservation and fixation of the organs, corsets, such as she may have worn, were applied. Fig. 1 shows that when a corsetted woman breathes the tightened hour-glass-waist keeps the liver, stomach, and spleen from descending during inspiration. The corsets take the place of the active contraction of the muscles of the abdominal wall of a man who breathes mostly by the expansion of his ribs. The abdominal viscera yield only slightly, hence the force of the diaphragm is spent on the ribs, which are raised upwards and outwards, and the woman, whether naturally a costal breather or not, perforce becomes one. She cannot take a full meal because there is not room above the waist for expansion of the stomach without encroaching on the respiratory space, unless she breathes harder and raises the ribs more. The abdominal muscles atrophy because their function is thrown into abeyance by tight lacing. As long as the costal cartilages remain supple all may be well. But at 40 the costal cartilages begin to ossify and become stiff, and most women begin to find that they cannot fully execute the old costal respiratory movement, and so they undo their stays, and have recourse to the partial abdominal breathing of childhood. Or pregnancy may occur, and the corsets have to be laid aside. The partially atrophied abdominal muscles are not then able to oppose the diaphragm and expanding uterus, they cannot rally to the play of the diaphragm, but give before it. The abdominal viscera therefore gradually descend, and *Glenard's disease* is produced. Hence the

frequency of the disease in women, and the danger of its occurrence in those who resume work after confinement before the abdominal muscles have adapted themselves to the emptied abdomen. *Glenard's disease is thus the result of a vitiated method of respiration.* Displacement of the thoracic viscera is always present.

ELONGATION AND DISPLACEMENT OF THE STOMACH.—Fig. 2 shows a condition of the stomach familiar to clinicians. It lies mostly in the left half of the body and is vertical and greatly elongated. Further, the liver below the 10th and 11th ribs is prolonged downwards to the crest of the ilium, forming what is called Riedel's lobe. The gastro-hepatic omentum is elongated, and the lesser curvature of the stomach is not, as it should be, tucked under the margin of the liver. In normal respiration the viscera under the domes of the diaphragm move downwards and forwards more than the parts under the heart: the liver and kidney on the right, and the stomach, spleen, and kidney on the left swing downwards, forwards, and inwards with each inspiration. The anterior margin of the liver rides over the stomach, while the lesser curvature of the stomach passes under the liver. But if pressure is applied to the front of the abdomen by corsets these organs can no longer ride forwards over each other, producing the heaving seen in the upper abdomen during inspiration. Hence they move downwards, the gastro-hepatic omentum is stretched, the stomach assumes a vertical position, and Riedel's lobe is gradually produced in the liver.

THE PRODUCTION OF GALL-STONES.—In the subjects of the dissecting room who have *Glenard's disease* the writer almost invariably finds gall-stones or evidence of them—dilated biliary passages. The explanation is as follows:—The neck of the gall-bladder and

the cystic and hepatic ducts lie firmly embedded in the gastro-hepatic omentum, which fixes them to the most stable part of the diaphragm—that surrounding the inferior vena cava. The fundus of the gall-bladder is fixed to the under surface of the right lobe of the liver, which in Glenard's disease undergoes the greatest expansion downwards, for, in ptosis of the liver the organ is always flattened from before backwards and elongated vertically. Thus while the cystic duct and neck of the gall-bladder are fixed the fundus is pushed downwards, bringing a strain to bear on the cystic duct and tending to occlude it. But there is another factor. The cystic duct turns at an angle of 40° to enter the common bile duct; here the spiral valve is developed to keep it open. As the liver is depressed, the angle at which the cystic duct enters the common bile duct becomes more acute, and the duct may be temporarily occluded. The cystic duct is obstructed, bile is abnormally retained in the gall-bladder, and a condition favourable to the formation of gall-stones is thus induced. (See also "REVIEW," p. 600).

DIVERTICULA OF THE DUODENUM.—In the case shown in Figs. 1 and 2, the duodenum, owing to the pressure at the waist, has been squeezed down until, instead of lying behind the liver and stomach, it occupies a position on the brim of the pelvis. Elongation of the gastro-hepatic omentum and attempted elongation of the common bile duct have been already pointed out. The bile duct is coated with a layer of tough connective tissue; it will not yield, but the duodenal wall, which the duct perforates obliquely, is soft and extensible, and it yields. As the duodenum, as a whole, is pushed downwards, the part of its inner wall above the entrance of the bile duct is drawn up into a tent-shaped diverti-

culum. These diverticula are present in the bodies of all women in which there is evidence of tight corsets having been worn.

FLOATING RIGHT KIDNEY.—The kidneys become displaced. The right kidney is displaced 10 times more frequently than the left for the following reason:—The right kidney and liver form a solid mass, semi-fluid in life, filling the right dome of the diaphragm, and for present purposes the two organs may be regarded as one, so accurately are they moulded together. The movements of the deep or dorsal part of the liver correspond to those of the right kidney. On the other hand the diaphragm cannot affect the left kidney much, because the stomach and spleen form a movable intervening mass.

LA PRESSE MÉD., Oct. 22, p. 1011.
Suture of Wounds of the Heart.

F. TERRIER and E. RAYMOND.

In wounds of the heart the pericardium is usually involved. Limitation to the heart or pericardium alone is possible, but too rare to be of practical importance. The writers have collected more than 51 cases of cardiorrhaphy for penetrating wounds, which fall into 2 classes: (1) those in which no definite method was employed, the formation of a more or less rectilinear skin flap, or the simple enlargement of the wound being followed by the resection of one or more ribs; (2) those in which a hinged flap of the ribs and soft parts was made, which was replaced on completion of the operation. This "shutter" was made to open upwards, downwards, inwards ("REVIEW," Vol. III., pp. 400 and 629), or outwards, as appeared best to the operator. After studying the relative advantages and disadvantages of the rival

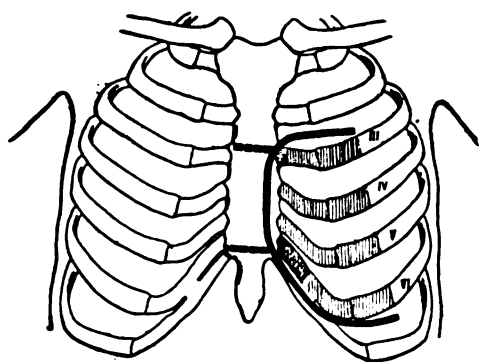


FIG. 1.—Diagram showing extent of flap.

methods, with especial reference to the best means of dealing with the pleura, lung, and pericardium, the writers conclude that the following operation, which may be divided into 6 stages, is applicable to the majority of cases :—

FIRST STAGE.—A hinged-flap opening outwards is formed. The knife is inserted in the sixth intercostal space, the exact distance from the sternum depending on the position of the penetrating wound, and is carried along the lower border of the sixth rib as far as the sternum, dividing skin, subcutaneous cellular tissue, some fibres of the rectus abdominis, and exposing the bridge of cartilage which unites the sixth and seventh costal cartilages (*p.c.*, Fig 2). The ascending limb of the incision is carried along the sternum sufficiently near the middle line to expose thoroughly the left sternal margin. The horizontal superior limb varies in position according to the level of the cardiac wound. If this is in the fourth, fifth, or sixth interspaces the knife may be carried along the third interspace, so that the flap contains the fourth, fifth, and sixth ribs, but if the wound is higher, and there is a possibility of the

base of the heart being involved, the upper end of the incision must be carried an interspace higher. Thus the upper end of the incision may be varied at pleasure, while the lower should always be in the sixth interspace. The upper end of the incision divides some fibres of the pectoralis major and exposes the intercostal space.

SECOND STAGE.—The “shutter” is opened and turned outwards. With this aim the knife frees the upper and lower borders of the sixth costal cartilage, from the sternum to the bridge of cartilage uniting the sixth and seventh ribs (*p.c.*, Fig. 2). The

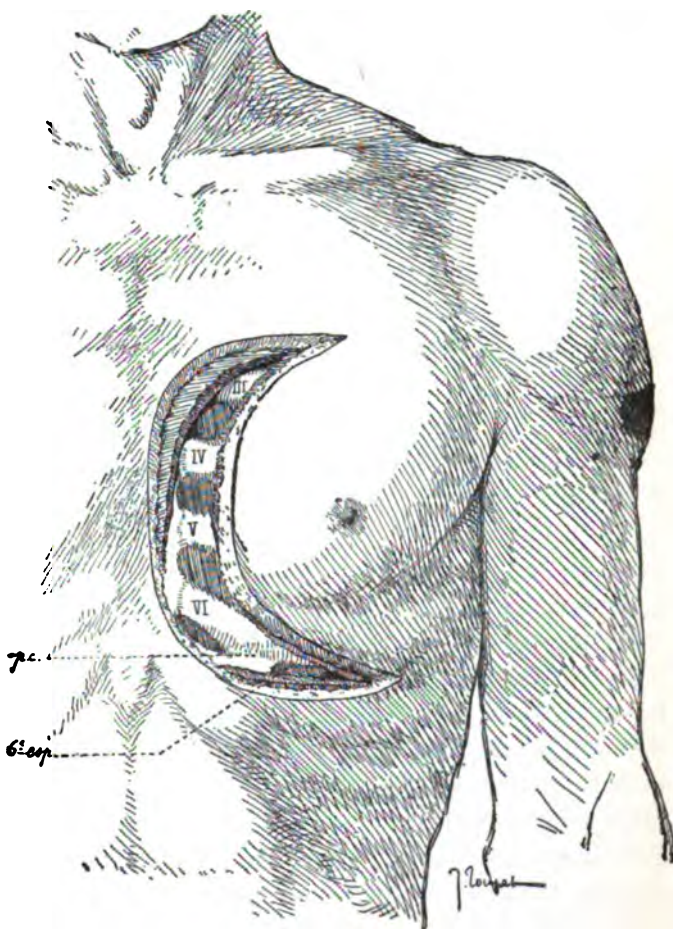


FIG. 2.

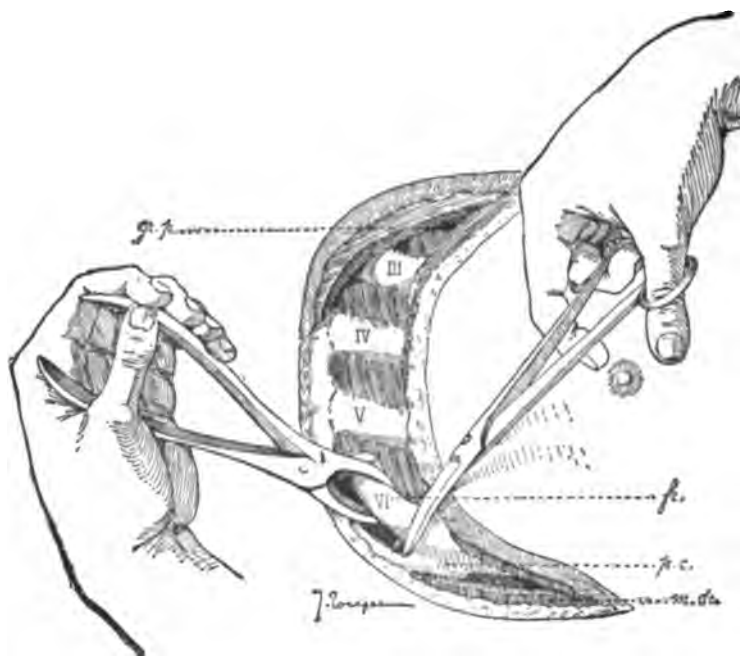


FIG. 3.—*fr.*, piece of cartilage situated between the sternum and the cartilaginous bridge, *p.c.*; *gr. p.*, pectoralis major; *m.dr.*, rectus abdominis.

perichondrium is freed from the posterior surface by the elevator and the fragment is removed by 2 snips of the scissors (*fr.*, Fig. 3). It is not missed when the flap is replaced. Although the sixth rib cannot be fixed to the sternum, it is still held in place by the bridge of cartilage that unites it to the seventh. Through the breach thus made the finger or elevator is introduced, and frees the posterior surfaces of this bridge of cartilage and the fifth and fourth chondro-sternal articulations from the soft parts and perichondrium adherent to them. The cartilaginous "bridge" and the other costal cartilages can then be divided close to the sternum without fear of wounding the pleura. To turn the flap outwards the right hand seizes its internal border

and elevates it (Fig. 4), while the left hand, covered by a towel, glides between the posterior surface of the flap and the parietal pleura, which is readily peeled off, whether or not there is pneumothorax. This peeling of the parietal layer of the pleura is continued outwards well beyond the level where the "hinge" is to be formed. This is made by pulling each rib forcibly outwards, while pressing with a finger externally at the level where the fracture is desired. Usually subperiosteal fractures result, but even if, as in older subjects, the fractured surface is sharp and jagged, the pleura is protected by the towel which is left in place until the cardiac wound is sutured (Fig. 5). The following are the

relations of the parts, when the flap is turned outwards. Close to the sternum are a series of white bands of perichondrium (*pch.*, Fig. 5).

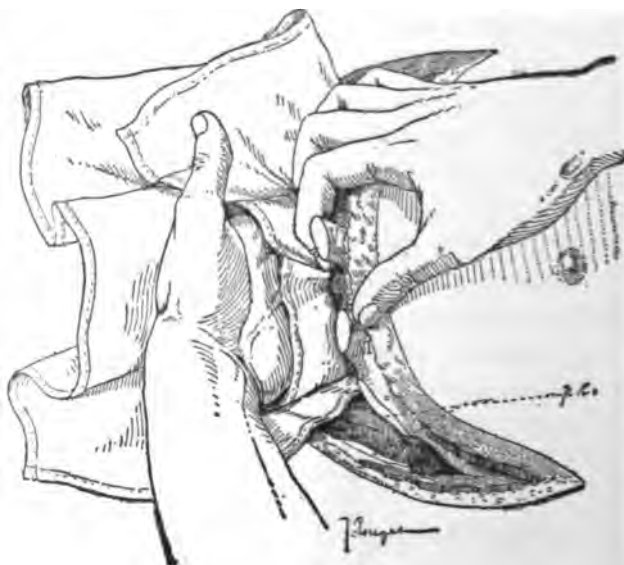


FIG. 4.—*p.c.*, as in preceding figs.

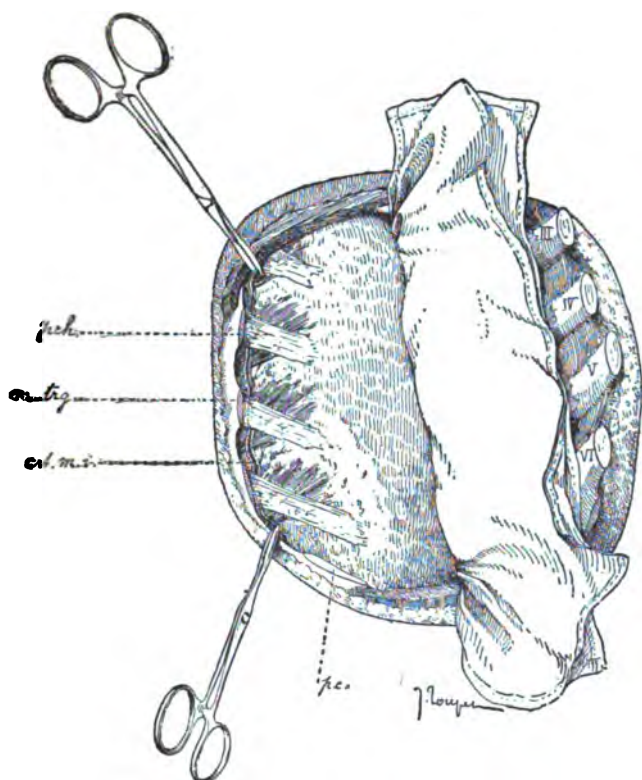


FIG. 5.—The hinge-flap is opened; *pch.*, strip of perichondrium; *m.trg.*, triangularis sterni; *art.m.i.*, internal mammary artery, on which are placed 2 pressure forceps.

Behind these and crossing them obliquely are the fibres of triangularis sterni, the external ends of which are free, having been torn away from their insertion into the ribs by the advance of the towel (*m. trg.*, Fig. 5). The internal mammary artery is not necessarily divided, but its intercostal branches frequently give trouble. It is best, therefore, to ligature it in 2 places.

THIRD STAGE.—The pleura is turned outwards. If, as is usually the case, the lung or pleura, or both, are wounded, resulting in serious hæmorrhage, this should now be arrested. If the wound of the lung is serious it may be necessary

to enlarge the pleural wound before applying pressure forceps or plugging. In other cases it may suffice to close the pleural wound by compressing the surfaces with artery forceps. Whatever plan is adopted the operation afterwards proceeds as though the pleura and lung were intact. The pleural *cul-de-sac* formed by the parietal and visceral layers over the pericardium is detached and dragged upwards and outwards by hooking the index finger round its inferior and inner border (*c.s. pl.*, Fig. 6), which crosses the internal and inferior angle of the wound obliquely downwards and outwards, though it is sometimes hidden by a few lobules of fat. The inner margin of the pleural *cul-de-sac* is very adherent to the triangularis sterni, which, as it is useless to attempt separation should be detached from the posterior surface of

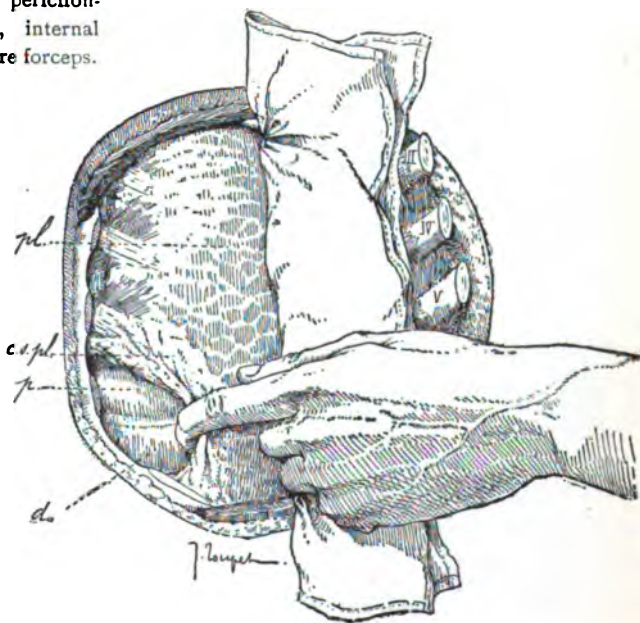


FIG. 6.—*c.s.pl.*, pleural *cul-de-sac*, round the free edge of which the finger is hooked; *pl.*, pleura; *p.*, pericardium; *d.*, diaphragm.

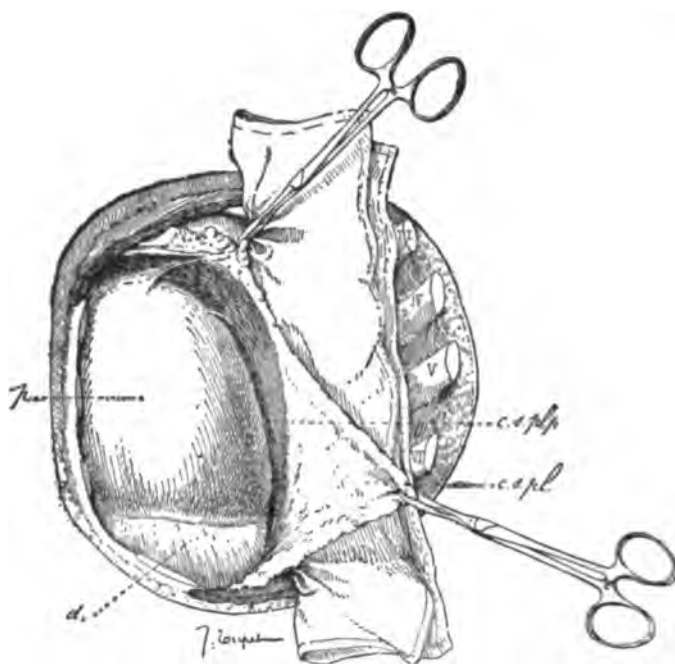


FIG. 7.—*c.s.pl.*, pleura retracted by pressure forceps; *p.*, pericardium; *c.s.plp.*, pleuro-pericardial *cul-de-sac* formed by retraction of the pleura.

the sternum, and turned outwards with the two layers of the pleura, which are then completely free (*c.s. pl.*, Fig. 7). A compress or sterile towel is placed on the pericardial side of the pleural sac, so that for the rest of the operation the pleural layers lie between 2 towels or compresses (only one is shown in the figures for the sake of simplicity).

FOURTH STAGE.—The pericardium is opened. It may be sufficient to enlarge the wound (Fig. 8), but, for exploration of the auricles a T-shaped incision, and for exploration of the posterior surface of the heart, an

inverted T-shaped incision give the most space.

FIFTH STAGE.—The cardiac wound is sutured. While an assistant retracts the edges of the pericardial incision with pressure-forceps the surgeon introduces the index and middle fingers beneath the heart and forces the ventricles gently forwards, so that the anterior surface is brought outside the pericardial wound. Thus a wound of this region is well exposed (Fig. 9). The heart is held between the two fingers, or supported against the superior border of the thoracic wound, and is thus kept in the position required. But if the left hand is otherwise engaged the heart may be satisfactorily fixed after the insertion of the first suture by the assistant

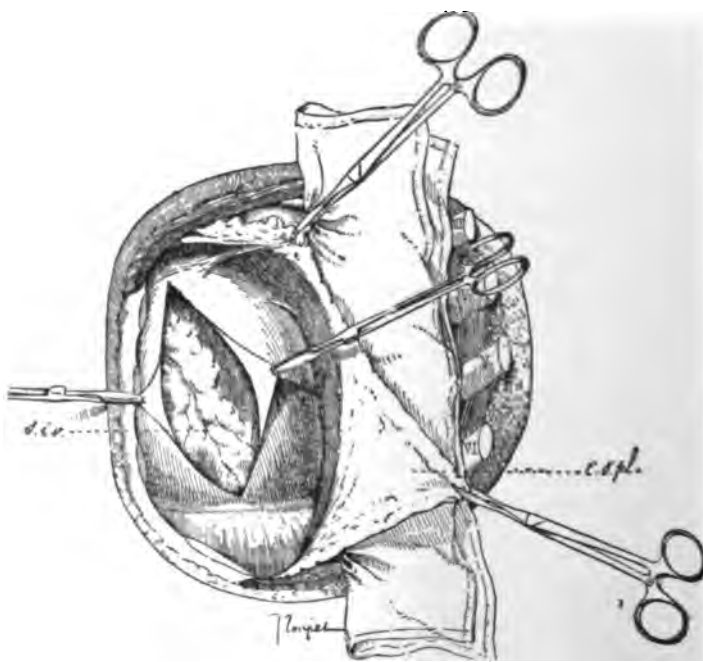


FIG. 8.—*s.iv.*, interventricular groove; *c.s.pl.*, pleural *cul-de-sac*.

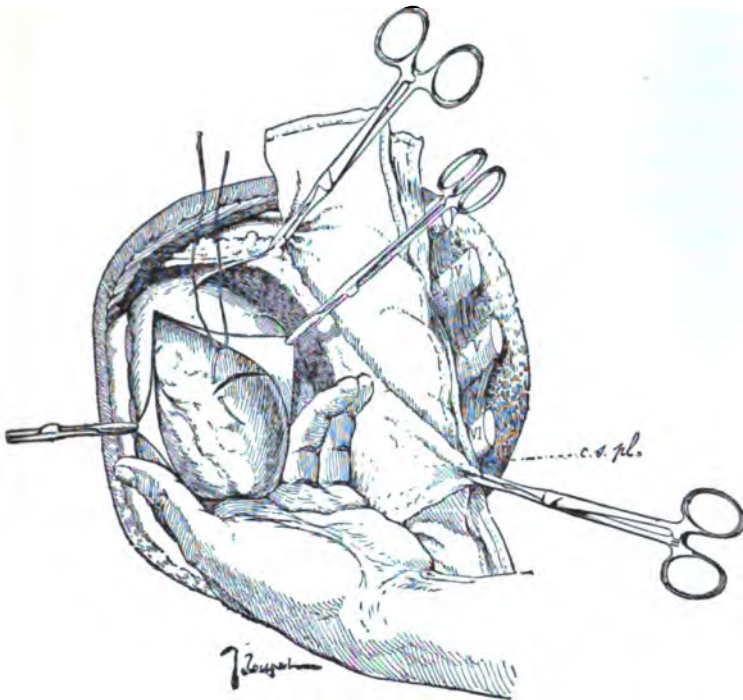


FIG. 9. —The heart is fixed by the fingers until the first suture is inserted.

pulling on the ends (Fig. 10). The left auricle can be explored only if the third rib has been included in the flap. To explore the posterior surfaces of the ventricles the apex may be tilted forwards by volsella forceps. But if there is a second wound posteriorly, for instance the aperture of exit of a bullet, it is better to rotate the heart round its long axis by pulling on the ends of the sutures used in closing the anterior wound. The only region of the heart inaccessible to this method is the right auricle. To expose it the left

border of the sternum may be cut out to the required extent with bone forceps, but as the process is tedious it is better to make a hinged shutter in the sternum. The superior and inferior "horizontal" limbs of the skin incision are prolonged transversely across the sternum (*interrupted lines*, Fig. 1). The soft parts are freed from the posterior surface of the bone with an elevator, and the sternum is completely divided with bone forceps at the level of the 2 skin incisions. The bone between is then raised and turned over to the right. If much force is employed the "hinge"

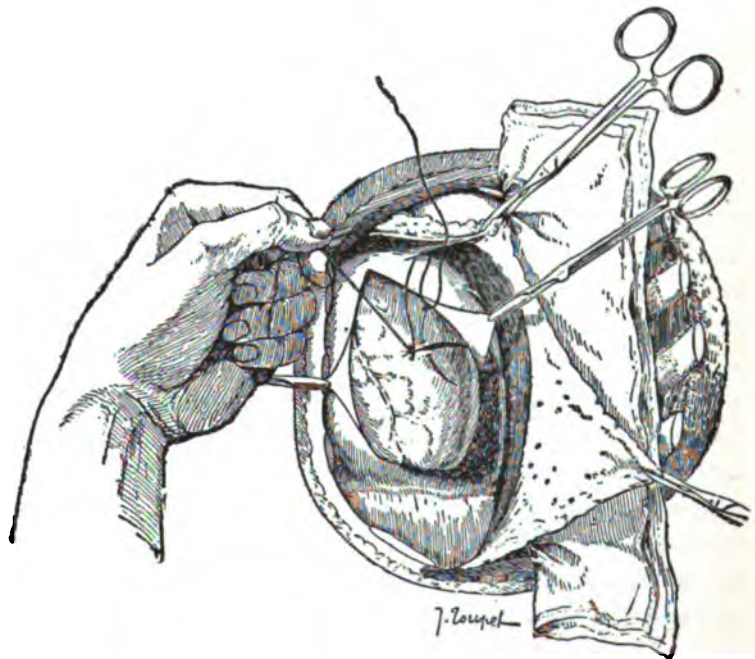


FIG. 10.—Fixation of the heart by drawing on the ends of the first inserted suture.

forms at the right costo-chondral articulations, but it is practically never necessary to do more than bend the costal cartilages without breaking them. This procedure exposes the whole of the heart, and is not difficult if the left internal mammary artery has been ligatured. The right internal mammary artery is somewhat stretched but, according to the writers' experience on the cadaver, never ruptured.

THE SIXTH STAGE consists of suturing the pericardial and pleural wounds and restoring the flap to its normal position. If it is decided to employ drains, those from the pleural and pericardial cavities respectively are kept well apart, the former being conducted out at the inferior and external angle of the wound, and the latter at the inferior and internal angle through the gap left by removal of the cartilage of the sixth rib.

See also "REVIEW," p. 630.

BOSTON MED. AND SURG. JOUR.,
Sept. 25, p. 345.

The Surgery of the Ilio-Psoas Bursa.

The ilio-psoas bursa lies beneath the musculo-tendinous portion of the ilio-psoas muscle and in front of the capsule of the hip-joint. It extends upwards from the lesser trochanter, frequently to above the brim of the pelvis. It has received scant attention from anatomists and surgeons, yet in 3 cases observed by the writer disease of this bursa simulated deep abscess in front of the hip-joint, and in one of these strangulated hernia was diagnosed. Tillaux, who best describes this bursa, says, "It often communicates with the capsule of the hip-joint through an opening. Fluid collected in it gives rise to a deep-seated tumour which lifts up the femoral vessels and may be mistaken for a cold



THE ILIO-PSOAS BURSA.

(A) Poupart's ligament; (B) anterior crural nerve; (C) bursa opened through the fibres of the ilio-psoas and retracted by threads; (D) femoral artery; (E) femoral vein; (F) sartorius muscle.

The dotted line represents the limits of the bursa in one case.

abscess, a cyst developed in a gland, or an old hernial sac. Inflammation of the bursa may extend to the joint or *vice versa*. Thus psoriasis may lead to suppuration first of the bursa and then of the hip-joint. Contrariwise, acute arthritis of the hip may produce acute inflammation of the bursa resulting in abscess."

CASE 1.—A man, aged 70, noticed a painful lump in the right groin which caused stiffness of the leg. The bowels had not acted for 2 days and a medical man diagnosed strangulated hernia. He attempted reduction, causing considerable pain. There was marked osteo-arthritis of the hands. In the right femoral region, below Poupart's ligament, was a tender tumour of the size of half an egg. The femoral artery was lifted up over it and pulsated over its inner part. Deep fluctuation could be felt. The external inguinal ring was normal and femoral hernia was excluded by the fact that the tumour was external to, and beneath the femoral artery. Deep abscess in front of the hip-joint was diagnosed. A 2-in. vertical incision showed the anterior crural nerve stretched over the tumour. The incision was carried along the inner border of the ilio-psoas tendon and a thick sac was found and opened, liberating an ounce of sero-fibrinous fluid. On passing the finger into the sac a smooth cavity lined with synovial membrane was felt. There was an opening half an inch in diameter through which the finger could be passed into the hip-joint, where the head of the femur could be felt rough and covered with osteo-arthritic deposits. Serum and fibrin were washed out of the joint with normal saline solution, the sac was sewn with catgut, and the wound in the skin was sutured. Complete relief followed.

CASE 2.—A man, aged 22, had gonorrhœa. In Aug., 1901, the hip and groin were exquisitely tender. In front of the left hip-joint

was a diffuse swelling giving fluctuation on deep palpation. Acute gonorrhœal arthritis with probably abscess in front of the joint was diagnosed. Under ether a vertical incision was made over the most prominent part of the swelling. The psoas muscle, to the outer side of the anterior crural nerve, was exposed, and beneath it deep fluctuation could be felt. A director was passed vertically between the fibres, and about half an ounce of cloudy serum with fibrin flakes escaped. The opening was dilated with dressing forceps, and the finger was passed into the cavity of the bursa, which extended upwards over the pelvic brim for 2 in. beneath the ilio-psoas muscle. Beneath the lower end of the incision the finger entered the hip-joint through a wide opening in the bottom of the sac. Upon the articular surface were felt numerous slightly roughened spots where the cartilage had been eroded. Much cloudy serum and fibrin were washed out of the joint with normal saline solution. In view of the favourable results reported from the drainage of gonorrhœal joints a large strip of iodoform gauze was carried upwards to the extremity of the bursa, where it extended over the pelvic brim, and another downwards into the hip-joint, the ends of both protruding through the incision. Immediate relief was given. The joint was drained for a week, and the wound healed in 3 weeks. A stiff joint resulted, but under ether the adhesions were broken down. The patient now walks with a limp.

CASE 3.—A man, aged 38, addicted to alcohol, was admitted to hospital on Sept. 5. He had in the right groin an indurated tender mass which crepitated. Movements of the hip were painful and attended with spasm. The tenderness extended above Poupart's ligament to the region of the anterior superior spine. On Sept. 4 he had 3 chills, much pain

in the right groin, and vomiting. On Sept. 5 he was much worse, the pulse was rapid and weak, and there were profuse sweating and delirium. There were swelling about the hip-joint and a feeling of gas with fluid in a cavity just below Poupart's ligament and outside the femoral vessels. Under ether a vertical incision was made one inch outside the femoral artery. The sartorius muscle was drawn outwards. The incision was carried into the abscess cavity, from which gas and much pus escaped. The finger was passed under Poupart's ligament and down to the back of the pelvis under the psoas muscle. Directly under the incision the finger entered the hip-joint. The joint surface was smooth and apparently healthy. The abscess had extended a short distance under the femoral vessels. As it had entered the joint a posterior incision behind the trochanter was made, the joint was irrigated, and rubber drainage tubes were inserted. Death occurred 15 hours later. As the surfaces of the joint were smooth the disease probably extended to it from the bursa. Earlier diagnosis and incision should have been made.

GAZ. HEBDOM. DE MÉD. ET DE CHIRUG.,

Oct. 23, p. 997.

Membranous Angina in Secondary Syphilis.

By G. BELLAN.

Membrane on a chancre or on a secondary syphilide of the tonsil which clinically and histologically suggests diphtheria is not infrequently seen. Devasse and Deville (*Archiv. Gén. de Méd.*, 1845) called attention for the first time to "mucous patches covered by a greyish or yellowish exudation, firm, compact, adherent, resembling completely diphtheritic membranes." Bazin (*Leçons Théoriques et Cliniques*

sur la Syphilis) showed the possibility of confusing the ulcerated mucous patches in the mouth and soft palate with mercurial stomatitis or diphtheria. Fournier (*Leçons Cliniques sur la Syphilis chez la femme*) described a membranous exudation sometimes seen on the surface of a chancre of the cervix uteri, and on secondary syphilides of the vulva. Cornil found that the false membranes of syphilis and of diphtheria were histologically identical. Bacteriological examinations of these cases have shown that the false membranes were due to various organisms, alone or in different combinations—streptococcus, bacterium coli communis, and staphylococcus aureus and albus being found.

Syphilitic membranous angina is most frequently found in cases presenting other symptoms of the disease, though cases are recorded in which the primary lesion was not recognised, and membranous angina was the first symptom. It appears most frequently in the second or third month of the infection, sometimes much later. The patient frequently states that it followed a chill. The pain is considerable, especially on swallowing, and is usually bilateral. Pain, tinnitus, and deafness often occur. Rarely the angina begins with a rigor. The patient complains of weariness, insomnia, slight headache, and marked dysphagia which lasts 2 to 4 weeks. The duration of the angina is an important diagnostic point. The patient appears pale and restless. The voice is nasal sometimes, and hoarse. The tonsils are swollen and may almost meet, and the whole throat is vermilion. On the congested tonsils dirty-white, greyish, or yellowish patches are usually seen. They may be on the tonsils only or may encroach on the pillars which are also red and engorged. The anterior pillars are

most frequently affected, and more rarely the uvula and posterior pillars. Exceptionally the posterior aspect of the pharynx is invaded. The patches on the tonsils are frequently confluent, and the appearance, especially when the uvula is also covered, is that of diphtheria. The membranes sometimes slightly project above the mucous membrane, and may be surrounded by a red line of inflammation. They are even more firmly adherent than in diphtheria, but an important point is the constancy with which an ulcer is found under the membrane. The false membrane of syphilis like that of diphtheria does not disintegrate in water. In some cases, however, the membrane resembles that of a pulpy non-diphtheritic membrane, but is distinguished by always having a somewhat blood-stained and bleeding ulcer under it. This difference is seen when the membrane is disappearing. On touching the tonsil it feels indurated and is almost as hard as a chancre, and there is glandular enlargement, chiefly of the glands anterior to the sternomastoid muscle, but the sub-maxillary and parotid glands are also frequently enlarged. The glands are hard and tender, but the peri-glandular tissue is not involved. They never suppurate, and the enlargement is not so great as in diphtheria. Sometimes there are mucous patches on the commissures of the lips or of the tongue; then diagnosis is much facilitated. Albuminuria and the paralyses characteristic of diphtheria never occur.

Diagnosis between the various forms of angina presents considerable difficulty:—

1. FOLLICULAR TONSILLITIS.—In acute cases one or both tonsils may show a whitish covering which may at first suggest a false membrane. This disease generally begins with a higher temperature than occurs

in syphilitic angina. The tongue is usually dirty, and the breath fetid. The membrane is non-adherent, easily detached with forceps, and dissolves in water. It begins in the crypts of the tonsil. The mucosa beneath is red and inflamed, but never ulcerated. The process is limited to the tonsil, does not invade the pillars of the fauces, and there is little or no glandular enlargement. The duration is from 5 to 8 days. Syphilitic angina much resembles this condition when the tough false membrane is (before disappearing) replaced by a slightly adherent yellow, sticky exudation, soluble in water. But in the former the dysphagia lasts weeks, in the latter only days, and the mucosa below in the one shows small blood-stained and bleeding ulcers, in the other dilated crypts, and is red but not bleeding.

2. HERPETIC ANGINA.—Frequently after bursting spontaneously herpetic vesicles leave small erosions, which may become covered with membrane. This membrane appears on the tonsils, the anterior or posterior pillars of the fauces, and, sometimes, on the posterior pharyngeal wall. As in syphilitic angina the microbes found are extremely various. The onset of herpetic angina is striking and characteristic: there are a rigor, high temperature, and systemic depression. In syphilitic angina the temperature is normal or only slightly raised. In herpes there is often severe headache, in syphilitic angina the only painful symptom is the dysphagia, and even this is much less severe than in herpes. Syphilitic angina is of long duration, herpetic lasts only 8 days. In the former there is glandular enlargement, not in the latter. Finally there is often a co-existing labial or genital herpes.

3. DIPHTHERIA.—The diagnosis from diphtheria is difficult. If by Gram's method Loeffler's bacillus cannot be found cultures

must be made. In the meantime clinical observations may assist the diagnosis. In both affections the onset is insidious and the temperature only slightly raised (100° to 102°). The dysphagia begins gradually and is much more marked in syphilis than in diphtheria. On the other hand the general condition is greatly affected in most cases of diphtheria: the complexion is pale and earthy, the eyes are sunken and there are dark rings round them, the eyelids are violet, and the prostration is considerable. Hence the patient seeks advice early; in syphilis he does so only after some time, and on account of the prolonged dysphagia. If treated immediately diphtheria can usually be cured in 12 days; if not recognised complications frequently result, and demand attention, such as extension of the diphtheritic process, causing laryngeal, bronchial, nasal, oculo-palpebral, and auricular diphtheria, nephritis, myocarditis paralysis, etc. Dysphagia which has lasted several weeks, without albuminuria or serious symptoms, is not due to diphtheria. The false membranes of both diseases appear much alike: that of diphtheria is frequently thinner, less adherent, and is more easily removed with forceps; it never covers blood-stained and bleeding ulcers. Diphtheritic membrane tends to spread; usually the syphilitic is localised on the tonsil, impinging sometimes on the posterior pillars, but rarely appearing on the posterior pharyngeal wall. In diphtheria on the second or third day the pharynx is nearly always covered with membrane and the uvula is involved. When the syphilitic false membrane spreads it shows a characteristic predilection for the hard palate, which is not attacked in diphtheria. Glandular enlargement is more marked in diphtheria. In syphilis the tonsil is harder.

4. MEMBRANOUS STREPTOCOCCIC ANGINA.—This disease differs from syphilitic angina

in the following points:—It always begins with a rigor, the temperature is 102° — 104° , and the whole aspect of the patient suggests a serious condition. The dysphagia is intense and trismus frequently occurs. The breath is fetid, the tongue is furred, and there is gastric disturbance. There may be diarrhoea and vomiting. The membranes are not firmly attached. The pillars and the uvula frequently are oedematous. The glandular swelling is greater, the peri-glandular tissue is also affected, and the glands may suppurate. Hypothermia, albuminuria, suppuration, cachexia may precede a fatal termination.

5. STAPHYLOCOCCIC AND PNEUMOCOCCIC ANGINA.—The temperature at onset is only slightly raised, the angina is almost always benign, and lasts about a week. The glandular reaction is sudden and painful. Here again the diagnostic point is the long duration of the dysphagia in secondary syphilis.

6. ANGINA FROM THE COLON BACILLUS.—The differential symptom is again the short duration of the dysphagia. Moreover the breath is extremely fetid.

7. ANGINA DUE TO OIDIUM ALBICANS.—The fungus may be found in pure culture in the false membranes of syphilis; it may also simulate, though rarely, membranous angina. But the patches are friable, and have not the cohesiveness of the syphilitic membrane. There is no general reaction, dysphagia, or enlarged glands.

8. FRIEDLÄNDER'S ANGINA.—Many of the symptoms closely resemble those of syphilitic angina. There are the same insidious onset, slight pyrexia, and dysphagia, and the long duration (in 15 out of 19 cases more than 3 months). The false membranes are adherent, but less extensive than in syphilis, and never lie on an ulcerated mucous surface. The induration of the tonsil, the general condition

of the throat, and the glandular enlargement of syphilis are absent.

9. VINCENT'S ANGINA. — In its early membranous condition this is difficult to diagnose from syphilitic angina. The tonsil shows a membrane like a splash of candle-grease. This is soft, not very adherent, and beneath is a red, inflamed mucosa ulcerated and bleeding. The membrane does not dissolve in water. The entire throat participates in the inflammatory condition. The illness usually begins in an insidious manner without marked prodromal symptoms. The temperature usually varies from 100° to 102°. The general condition is exactly like that of secondary syphilitic angina. The patient is pale, depressed, and weary; there are insomnia, and vague articular pains. The sub-maxillary glands are always enlarged and tender; the dysphagia is not intolerable and may last from 2 to 4 weeks. A fusiform bacillus associated with a spirilla is found in the exudation. This microbic association appears to be constant and characteristic. Simonin, however, suggests that these microbes, which are surface parasites, may secondarily invade territories infected by Loeffler's bacillus, or by the streptococcus (*Bulletin de la Soc. Méd. des Hôpitaux*, Mar. 20, 1902). Then the microbic combination ceases to be characteristic. The syphilitic false membrane is much more adherent than that of Vincent's angina, and, as has been pointed out, in its latest stages becomes less adherent and soluble in water. This change never takes place in Vincent's angina. The angina is rarely bilateral, while syphilitic angina is almost invariably symmetrical. In Vincent's angina there are two constant symptoms—fetid breath due to the coated tongue, and abundant salivation. Untreated syphilitic angina persists indefinitely in the same condition.

In the angina of Vincent severe ulceration occurs. The ulcers are deep, oval, sharp-edged, and the floor is covered with a putrid exudation. At this stage it rather resembles chancre of the tonsil, except that the induration is absent. Treatment is diagnostic. The angina of Vincent is cured by taking a few spoonfuls of a solution of chlorate of potash, and by a few applications of iodine.

10. CHANCRE OF THE TONSIL.—Diagnosis from a chancre, which is sometimes covered with membrane, is not important, as the treatment is the same. The diagnostic points are that the lesion is unilateral, the glandular swelling and dysphagia are more intense, and the breath always is fetid.

The treatment of secondary syphilitic angina is that of syphilis; applications of silver nitrate are a useful adjunct.

DEUTSCH. ARCHIV F. KLIN. MED., Bd. 76,
Hft. 1 and 2, p. 122.

Multiple Diverticula of the Large Intestine.

By Dr. LUDWIG SCHREIBER.

Congenital intestinal diverticula are solitary and are chiefly represented by Meckel's diverticulum. They include all the coats of the intestine and are often called "true" diverticula to distinguish them from the "false," or acquired variety, which was formerly supposed to be due to prolapse of the mucosa through the muscular layer. It is now known that acquired diverticula, which are always multiple, may be either "true" or "false" (acquired hernia of the mucosa). As early as 1868 Fiedler reported 3 cases. In one there was general peritonitis with symptoms of perforative appendicitis, which was found post mortem to be due to perforation of a

diverticulum (one of many in the lower part of the ascending colon). In the second there were multiple diverticula scattered over the whole of the large intestine; one of these in the sigmoid flexure became perforated and produced extensive gangrene of the abdominal walls. In the third multiple perforations of diverticula of the whole large intestine led to septic peritonitis. Though their clinical importance was thus demonstrated they were supposed to be pathological curiosities until Graser, in 1898 (*Verhand. d. Deutsch. Gesellsch. f. Chir.*), showed that they were not uncommon. The writer confirms the truth of this view. Six cases were found in a single year in the pathological institute of Königsberg university.

Acquired diverticula may be situated anywhere between the pharynx and rectum, but they are rare in the stomach. They generally affect males past middle life. Their etiology usually is obscure, but they have occasionally been produced by the traction of adhesions, which in 1 case were connected with an accessory pancreas, in 2 others with tumours, and in the remainder were due to chronic peritonitis. Klebs and others have reported cases in which the diverticula appeared to originate as herniæ into the perivascular tissue at the point of entry of the mesenteric vessels.

CASE 1.—A man, aged 63, was admitted to hospital dull and apathetic. He had had 3 attacks of apoplexy, the last, 3 days before admission. There were slight pyrexia, paralysis of the limbs and of the lower branches of the right facial and hypoglossal nerves. The thoracic organs appeared normal. The abdomen was distended and there was constipation, but peritonitis was not suspected. The temperature rose and death occurred from pulmonary œdema 4 days after admission.

NECROPSY.—There were atheroma of the aorta and cerebral vessels, with patches of softening in the basal ganglia, and chronic nephritis with dilatation of the left ventricle. The sigmoid flexure was in places thickened and of a blue colour and the lower part of the descending colon contained 14 diverticula varying in size from that of a pin's head to that of a cherry. All 3 layers were included, but at the summit the mucous and muscular layers were so reduced that the fæces with which they were filled and the peritoneum were practically in contact. There was general peritonitis. The blood vessels were normal. The diverticula were mostly situated between the layers of the meso-colon, or within the appendices epiploicæ, but a few were scattered elsewhere. They communicated with the intestinal lumen by a sharply defined aperture, and were covered by an intensely hyperæmic peritoneal layer. Near them were numerous wide apertures in the circular muscular layer, which were loosely filled with connective tissue.

CASE 2.—A man, aged 47, was admitted for sarcoma of the pleura and lungs with secondary growths in the liver and vertebræ. There was nothing to draw attention to the intestines. Post mortem the wall of the sigmoid flexure was found thickened. In the interior was a diverticulum of the size of a joint of the finger. A few smaller diverticula were scattered in the colon as far as the hepatic flexure. They were lined with smooth mucous membrane, and did not contribute to the fatal issue.

CASE 3.—A muscular and well-nourished man, aged 37, was admitted to hospital on Aug. 7, 1901. He had been a heavy drinker. For 5 or 6 months there had been pain in the hepatic region, for some weeks abdominal distension, and for some days œdema of the feet. There were constant diarrhœa, intense

cyanosis, dyspnœa, œdema of the legs, diffuse bronchitis, and pyrexia (100°6'). The cardiac dulness was increased to the left. There was slight ascites and œdema of the abdominal wall. The liver was enlarged but not tender. On Aug. 8 70 oz. of turbid hæmorrhagic liquid were obtained by aspiration of the abdomen. It contained red corpuscles and pus cells. The diarrhœa continued and death occurred painlessly on Aug. 11. Cirrhosis of the liver, ascites, and peritonitis were diagnosed.

NECROPSY. — There were double pleural adhesions, bronchitis, and dilatation of the right ventricle. The liver was fatty, and the spleen enlarged. There were multiple diverticula of the splenic flexure, the wall of which was thickened. Perforation of one of these had produced septic peritonitis. The abdomen contained gas and about 70 oz. of hæmorrhagic pus, in which were fragments of fæces and shreds of fibrin. The sigmoid flexure was studded with about 20 diverticula, varying in size from that of a pin's head to that of a hazel-nut. They contained scybala and were arranged in 2 longitudinal rows, one opposite the attachment of the meso-colon, the other between it and a longitudinal muscular band. The mucous membrane within the diverticula was either thinned or absent, and in one diverticulum the muscular layers were also destroyed. The rest of the colon was congested, but otherwise normal. One diverticulum which was examined microscopically appeared to be formed by hernial protrusion of the mucous membrane through the muscular layer, which was found only in the neck of the sac. The diverticula were the immediate cause of death.

CASE 4.—A professor, aged 70, who had never had any gastric or abdominal symptoms died in an attack of cardiac palpitation. Post mortem carcinoma in the upper lobe of the left

lung and fatty degeneration of the heart were found. The walls of the sigmoid flexure were thickened and studded with numerous small diverticula, the majority of which were formed of all 3 layers of the intestine, though the muscular layer was replaced by fibrous tissue at the summit. There were no diverticula opposite the attachment of the meso-colon.

CASE 5.—A previously healthy man, aged 70, entered hospital comatose on Nov. 29, 1901, and died on Dec. 1. Post mortem a large hæmorrhage was found in the left basal ganglia, which had ruptured into the left lateral ventricle. The whole of the peritoneal coat of the large intestine was congested and covered with dilated vessels. In the ascending colon were 2 small diverticula, in the descending colon 13, and in the sigmoid flexure 53. They were arranged in oblique rows, some being opposite the attachment of the meso-colon. They varied in size from that of a millet-seed to that of a cherry, and all contained scybala. The intervening muscosa was normal. All 3 layers of intestine entered into their formation. In some there were several secondary diverticula so that 2 or 3 communicated with the intestinal lumen by a single orifice.

CASE 6.—A well-nourished man, aged 67, was admitted to hospital on Jan. 23, 1902, with dyspnœa, vertigo, diffuse bronchitis, enlargement of the cardiac dulness to the left, and of the liver, œdema of both legs, and commencing gangrene of the right foot. The urine was albuminous. Death occurred on Jan. 26. Post mortem the aorta was found to be atheromatous, the heart dilated, and the lumen of the right anterior tibial artery obliterated. There was a carcinoma of the pyloric region with secondary growths in the liver and lymphatic glands. The gall-bladder contained calculi. The kidneys were sclerosed.

The large intestine was full of scybala. The hyperæmic ascending colon contained a small mucous polypus. At the splenic flexure there were a few polypi and diverticula containing mucus or fæces. The diverticula were more numerous in the descending colon, and especially in the sigmoid flexure. Altogether there were about 60, varying in size from that of a pin's head to a cherry. The neck was narrow and they were mostly bottle-shaped. The majority were situated between the layers of the meso-colon. In the small and medium sized diverticula the mucous membrane instead of lining the sac projected loosely into the intestinal lumen so as to simulate mucous polypi, but could easily be returned within the diverticulum. In the formation of the remainder all 3 layers of the intestine entered. In many places the longitudinal muscular layer was defective.

CASE 7.—A man, aged 67, who had been previously healthy, was admitted to hospital for cancer of the œsophagus, for which gastrostomy was performed. Death occurred from pneumonia 3 days later. Post mortem metastatic growths were found in the lungs and bronchial glands, one of which had eroded the trachea. On the transverse colon were several diverticula from the size of a pea to a hazel-nut, which until the intestine was opened were mistaken for metastatic growth. These increased in number up to the junction of the sigmoid flexure with the rectum where they ceased. There were about 130 in

all. Some were contained in hypertrophied appendices epiploicæ. They were scattered diffusely, had no relation to the vessels of the meso-colon, and were formed of all 3 layers of the intestine.

These cases confirm the statement of others, that acquired diverticula are always multiple, that though they may occur in any part of the large intestine except the rectum, they are most frequent in the sigmoid flexure to which they may be limited. The longitudinal muscular bands are exempt. In all except Case 3 the diverticula were of the "true" acquired variety. This shows that Graser's view—that these diverticula are invariably due to hernia of the mucous membrane—is incorrect. They also show that an abnormal development or distribution of the vessels entering in the meso-colon is not a necessary predisposing cause, for they were not limited to the intestine near the meso-colon. In every case the diverticula were produced by "propulsion," and not by traction of adhesions. The fact that the muscular layers were frequently atrophied or even perforated in places where there were no diverticula, indicates their probable origin in a primary weakness of the intestinal muscles. As most of the subjects were old men this was probably acquired rather than congenital. The fæces with which they were filled were extremely hard, and were therefore liable to act as foreign bodies and set up peritonitis. But more often the diverticula appeared to be harmless.

MEDICINE.

Fatal Cerebral Hæmorrhage in a Youth.
—T. M. Pearce, M.B., M.R.C.S. (*Lancet*, Nov. 15, p. 1321).—A youth, aged 19, left his work at noon, and hurried home to prepare for a football match. In the yard he washed himself and appeared well and cheerful. Entering the house he suddenly stopped and said, "My head does ache." His right hand, and more particularly his right thumb, were twitching. He then reeled and was dragged to a chair and asked if he had ever been like that before, to which he answered in the negative. The whole of his right arm began to twitch convulsively and he rapidly lost consciousness.

At 12.35 p.m. he was seen by the writer. He was lying on the floor unconscious. The pupillary reflexes were absent; the right pupil was markedly contracted and the left normal. The breathing was laboured and noisy; there was no distension of the cheeks. The heart was beating forcibly at about 120, the sounds being normal. The knee-jerks were active. He had 5 convulsions. The head was drawn sideways towards the right shoulder, the arms were internally rotated, and there was pleurothotonos with the concavity on the right side. Between the convulsions the arms were rigid and semi-flexed. The convulsions ceased about 12.55. The muscles then became relaxed. Both pupils were widely dilated and the knee-jerks were absent. The breathing, from being laboured, deep, and noisy, became quiet and shallow, and then ceased. The heart continued to beat about 2 minutes longer. He died at 1.15 p.m.

NECROPSY.—A large blood-clot was found in the cerebral ventricles, more blood in the left lateral than in right lateral ventricle. The bleeding appeared to have commenced in the left lateral ventricle and then to have made its way into the right. No clot was found in the brain substance itself. There were no miliary

aneurysms of the cerebral vessels and the source of the bleeding could not be found.

Osler says: "Ventricular hæmorrhage occasionally, but rarely, is primary, coming from the vessels of the plexuses or the walls. It is not infrequent in early life. Of 94 cases collected by Edward Sanders, 7 occurred during the first year and 14 under the twentieth. The clinical picture may be that of *apoplexie foudroyante*."

Appendicitis following Dysentery; Dysenteric Perforation of the Cæcum.—A. Vandebossche (*Gaz. Hebd. de Méd. et de Chirurg.*, Oct. 9, p. 949).—Dysenteric appendicitis is very rare. The writer has not found one case on record.

CASE.—A soldier, aged 34, on service in China, was admitted to hospital on June 28, 1901, suffering from appendicular colic. His health had been impaired by residence abroad and by alcoholism. His illness had begun 3 weeks before with diarrhoea, which was at first simple and then assumed dysenteric characters. There were bloody stools, tenesmus, colic, fever, and progressive wasting. For 3 days before admission the pain which had been diffused all over the abdomen became localised in the right iliac fossa.

The skin was of a leaden hue; the tongue was heavily coated, but moist. In the right iliac fossa there was some rigidity of the abdominal wall, but the anterior wall of the cæcum could be palpated. At the lower and inner extremity of the cæcum a hard cylindrical cord could be felt. This point and the whole iliac region were tender. There was a serous evacuation almost every hour. The patient was put on milk diet, and a dose of calomel was administered.

On June 29, there was a slight swelling of the abdominal wall at McBurney's point. On deep palpation, instead of the hard cord previously made out, a painful little tumour of the size of a large nut was felt. The morning temperature was 100.8° , and the evening 101.2° . On June 30 the diagnosis of appendicular abscess was made.

On July 1 laparotomy was performed. Behind and below the cæcum was a cavity filled with fetid pus. The abscess was encysted, and towards its inner walls the appendix was felt as a hard and rigid cord, much swollen, and projecting into the purulent cavity. Two large drainage tubes were inserted behind the cæcum, the wound was drawn together tightly with catgut, and a dressing was applied. Champagne and milk were administered, and 800 gm. of Hayem's serum were subcutaneously injected. The evening temperature was 102.2° , and the pulse 120, but there was no pain. He did not sleep well, and next day there was slight general depression. An injection of sterilised water into the drainage tubes brought away no pus. 800 gm. of Hayem's serum were again injected. There was progressive loss of strength, with symptoms of general sepsis. The temperature rose and the pulse became very rapid. There were delirium, sweating, and diarrhoea. He died comatose on July 8.

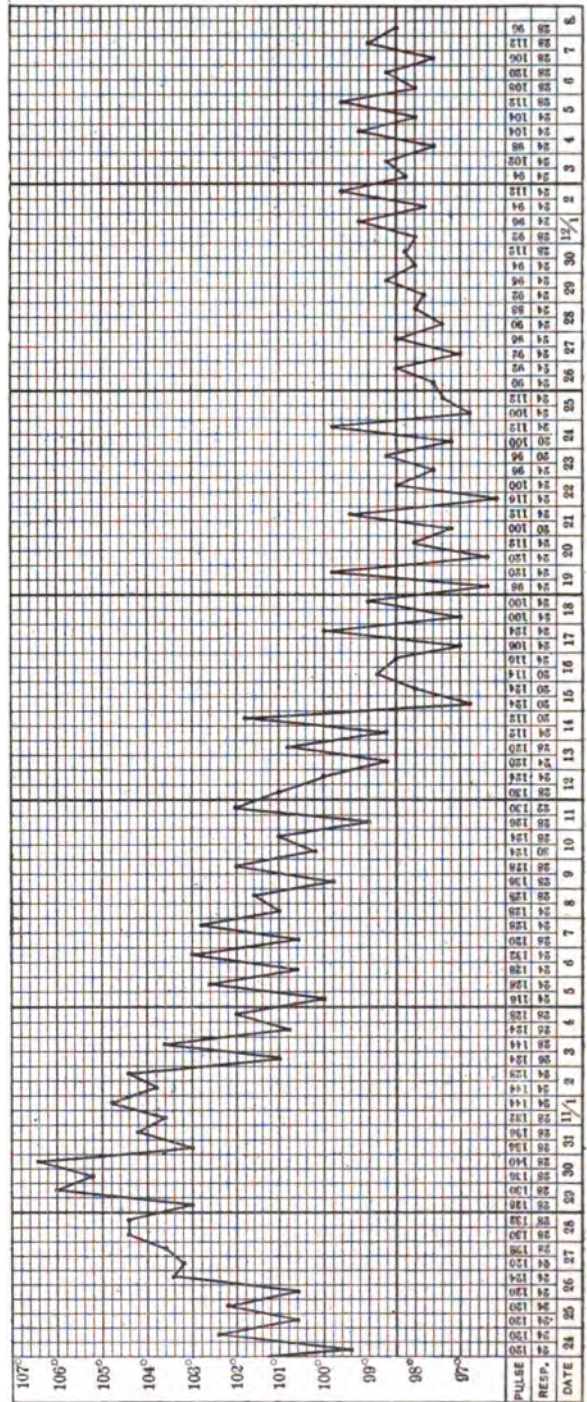
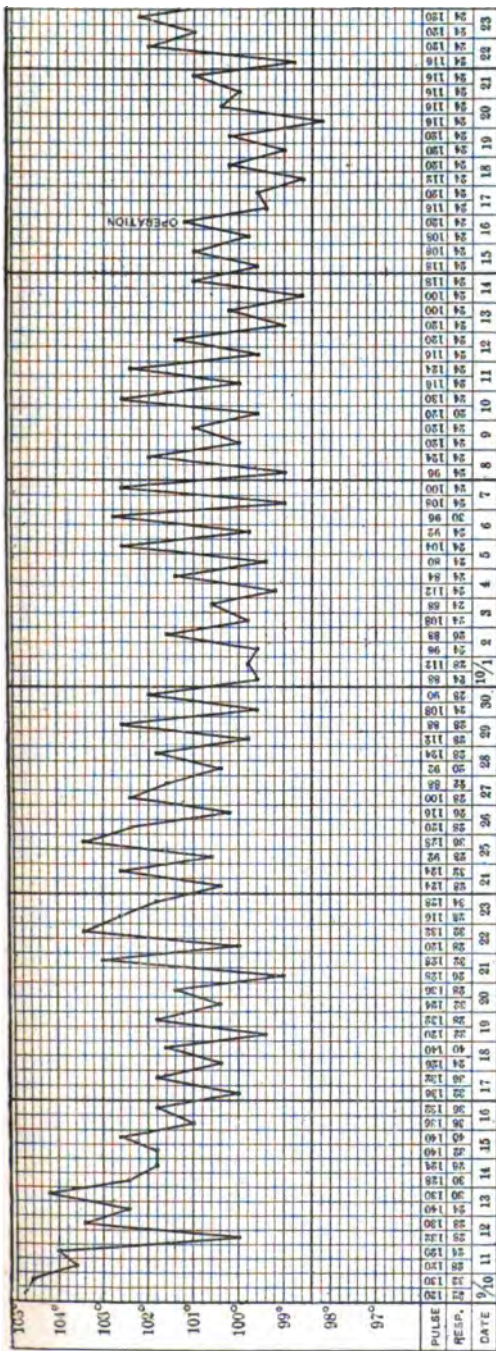
NECROPSY.—In the peritoneal cavity were traces of a superficial serous inflammation and inflammatory patches on the coils of intestines. The retro-cæcal abscess, when emptied of the fæces it contained, presented a cavity of the size of an orange, which was bounded by thick and solid adhesions. It communicated with the cæcum by a round opening, situated on the lower and external aspect of the bowel, about 2 cm. from its free end. The mucous membrane of the cæcum was ecchymosed and studded with swollen papillæ. It was covered by dysenteric ulcers and filled with sloughs, some of which separated readily. The ulcers extended along the whole length of the large intestine.

The writer thinks that the dysenteric ulceration spread from the cæcum by continuity into the appendix, and thus produced appendicitis.

Typhoid Infection of Ovarian Cysts.—M. J. Lewis, M.D., and R. G. Le Coute, M.D. (*American Jour. of Med. Science*, Oct., p. 590) have observed 2 cases of infection of an ovarian cyst in typhoid fever. Only 7 other cases appear to have been recorded, but previous to the discovery of the typhoid bacillus suppurating ovarian cysts were found after attacks of typhoid fever.

CASE 1.—A woman, aged 28, who had been ill 3 weeks, was admitted to hospital on Sept. 10, 1901, with all the symptoms of typhoid fever. In the fourth week of her residence in hospital the character of the temperature changed, assuming a hectic type (Fig.), and she complained of pain and tenderness in the region of the pelvis. Vaginal examination revealed a large, tender, fluctuating mass in Douglas's pouch. 37 days after admission a vaginal incision yielded about a quart of fetid, greenish pus containing the typhoid bacillus in pure culture. On introducing the finger cartilage and bone were felt in the cyst wall, thus showing that the cyst was teratomatous. The temperature fell. In the following week it rose again but was no longer hectic. There was a relapse of the typhoid fever; the spleen again became palpable and rose spots reappeared. After recovery the cyst was removed by laparotomy.

CASE 2.—A woman, aged 30, had typhoid fever. The attack was long and the temperature reached normal on the thirty-fifth day. It rose again to 102.2° on the evening of the thirty-seventh day. Next morning it fell to 97.4° . On the following 2 days it oscillated widely—between 97.6° and 103.6° . On the tenth day of the supposed relapse there was a chilly feeling. By the twentieth day the temperature averaged a little over 100° . Next day there were pain on defæcation and a little bulging of the lower



abdomen on the left side. On the twenty-fourth day vaginal examination revealed bulging in Douglas's pouch. Pelvic abscess was diagnosed, laparotomy was performed, and a large left ovarian cyst containing grumous, offensive pus was removed. The pus contained the typhoid bacillus in pure culture. The temperature fell to 99°. On the morning of the fifth day after operation the temperature rose to 104°. Subsequently it remained at about 102°. A rose spot appeared 7 days after the onset of the pyrexia. Thus there was a relapse of the typhoid fever, which ran a course of 14 days.

It is remarkable that in both cases the relapse occurred 5 days after the operation. In the other recorded cases a relapse did not follow the operation and convalescence was uninterrupted.

"Blue Toes."—Arthur Hall, M.A., M.B., M.R.C.P. (*Brit. Jour. of Dermatol.*, Nov., p. 418).—Cases of blue discolouration between the toes have been recorded, chiefly in young women. The condition has been attributed to chromidrosis and bacterial decomposition of the sweat and it also has been regarded as factitious. The writer has observed the following cases.

CASE 1.—A girl, about 16, came to hospital complaining that her toes were going blue. Between the toes was a peacock-blue discolouration which did not disappear on washing or rubbing. On being accused of having produced the discolouration she was much annoyed.

CASE 2.—The patient was a married woman, aged 50. Six months previously her doctor whilst examining her leg after an injury noticed blueness of the toes. Ever since she had observed the same discolouration. She always wore black stockings. Between all the toes, at the bottom and sides of clefts, were blue-green (peacock-blue) discolouration. A flake of peeling epidermis showed the same colour. Cultures from the blue areas did not yield any blue colouring organism. She remained in hospital some time and the colour gradually disappeared.

Some weeks later while examining the chest of a woman wearing a dark purple blouse the writer noticed a similar discolouration of the axillæ. The discolouration was evidently due to the dye. The fact that it had not affected the rest of the body, which was in contact with the blouse, led the writer to suspect that the discolouration between the toes in the other cases was due to the dye of the stockings.

CASE 3.—A married woman, aged 30, came to hospital for rheumatism of the legs. Examination revealed blueness between the toes similar to, but more intense than, that in the other cases. The nail-bed beneath the free ends of the nails, the nail-dirt, and the horny parts of the soles were also affected.

The stockings were black and had been bought a week before. Portions of them were soaked in (1) weak acid, (2) weak alkali, and (3) distilled water respectively, and the solutions were placed in an oven at body heat. Within half an hour the acid solution was strongly coloured peacock-blue whilst the alkaline solution and aqueous solution were not coloured. Evidently the discolouration of the toes was due to decomposition of the black dye by the acid sweat and was limited to the clefts of the toes because of their moistness.

Prof. Young examined the stockings and found that the dye was of the nature of azo-black, and probably made by the crude mixing of a derivative of diazo-benzene chloride with a naphthol or naphthylamine. When boiled in water it not only dissolved out as a purple colour, but also a solid sediment of dark colour was washed out of the stocking. When treated with dilute acids, various colours of bright blue or peacock-blue appeared according to the acid used, etc. It was thus a mixed dye.

Confluent Pustular Bromide Eruption.—Arthur Hall, M.A., M.B., M.R.C.P. (*Quarterly Med. Jour.*, Nov., p. 138).—A female child, aged 9 months, on Sept. 4 presented the appearance shown in the illustration. On Aug. 14 she

began to take 2 gr. of bromide of potassium thrice daily, for convulsions. She took the drug for about a week. On Aug. 25, after the bromide had been stopped, a spot was noticed on the left cheek. The rest of the spots appeared during the next 10 days.

The rash is especially marked on the cheeks and under the chin. There is none on the scalp. There are some large spots on the buttocks, otherwise the trunk is fairly clear. The forearms and dorsa of the hands, the legs, and the dorsa of the feet are much affected. The spots are all alike, and vary only in size, stage of development, and effects of friction. They are rounded, have a sharply-defined edge, and vary in size from that of a split pea to those 2 inches in diameter. The larger ones rise gradually to form a bun-like swelling. Some of the larger ones are covered with a thick dry crust. The surface of each is dotted over with small punctiform yellow pustules. These, and the rest of the exudation are covered by the distended superficial layers of the



stratum corneum, except in the older or more scratched spots, in which the pustules have begun to exude. The spots are very irritable, and the child tries to scratch and rub them.

The eruption in this case is best described as confluent pustular. The discrete acne-like pustular eruption is a much more common result of the administration of bromides. In adults there is sometimes a similar condition limited to one or two patches, but, as a rule, an extensive rash, such as this, is seen only in infants, who seem particularly susceptible to the drug. The corresponding eruption due to iodide of potassium is, on the contrary, more often seen

in older persons, possibly because this drug is not much given to infants.

Death after the Removal of Tonsils and Adenoids in a Hæmophilic Child.—

Francis J. Steward, M.S., F.R.C.S. (*Lancet*, Nov. 15, p. 1321).—A boy, aged 7, had enlarged tonsils and adenoids removed under ether at 9.30 a.m. Hæmorrhage was free and he lost considerably more blood than is usual. The bleeding stopped spontaneously and he was put back to bed, when it was observed that the pulse was 160 and very feeble. At 11.30 the pulse had improved, but

both sides of the neck and the left cheek were considerably swollen from blood extravasations. These swellings steadily increased and in a short time reached the sternum and clavicles, the patient becoming more and more anæmic and the pulse more feeble and rapid. No further bleeding took place into the mouth or naso-pharynx. He was ordered ice to suck and enemata of half a drachm of calcium chloride every hour. In the evening dyspnœa gradually developed and extravasation of blood into the pharyngeal submucous tissue was found. The dyspnœa becoming urgent, intubation was performed at 1 a.m. next day. Relief was only temporary and at 4 a.m. tracheotomy was performed. Considerable bleeding took place from the tracheotomy wound, but this was checked by the application of adrenalin chloride solution. The general condition, however, became progressively worse in spite of stimulants and saline infusions. Death took place 32 hours after the operation.

NECROPSY.—The pharynx, larynx, and the tissues of the neck generally were infiltrated with blood. The thymus was much larger than usual. No other abnormalities were found.

Although no definite history of hæmophilia, family or personal, was obtainable there can be little doubt of the existence of the diathesis. This is borne out not only by the severe hæmorrhage at the operation and the extravasation of blood into the neck, but also by the marked tendency to bleeding which was evidenced both in the tracheotomy incision and at the site of the needle punctures where the saline infusion was injected. The case is peculiar, on the other hand, in that no bleeding occurred from either the site of the tonsils or from the naso-pharynx after the operation, whereas steady and progressive extravasation of blood took place into the submucous tissues of the pharynx and larynx and also formed large swellings in the left cheek and on either side of the neck. This peculiar form of hæmorrhage precluded any attempt at local treatment.

The Symptoms present in Cirrhosis of the Liver.—G. G. Sears, M.D., and F. T. Lord, M.D. (*Boston Med. and Surg. Jour.*, Sept. 11, p. 285).—In order to determine how far the symptoms attributed to hepatic cirrhosis are due to the condition of the liver *per se* and how far to associated changes in other organs, the writers analysed all the fatal cases in the Boston City Hospital and the Massachusetts Hospital since 1896 in which the diagnosis was proved by histological examination. In the etiology alcohol was the most important factor; only 9 out of the 78 patients denied its abuse. Syphilis appeared to be the only cause in 4, and malaria in 3 cases. All grades of cirrhosis from the earliest to the most advanced form were included. Large and small livers occurred independently of the amount of fibrosis. Many chronic degenerative changes were found in other organs, and curiously, they were as common in the early as in the more advanced cases. The most frequent were arterio-sclerosis and renal disease. The former was found in 49 cases (often it was confined to a small patch in the aorta); chronic nephritis, diffuse or interstitial, was found in 23 cases. Some chronic affection of the myocardium other than simple hypertrophy was found in 37 cases. On the other hand, in 17 cases complications were slight or unimportant. Splenic enlargement was found in 65 cases and could not always be explained by passive congestion. Chronic peritonitis, more or less general, was found in 15 cases; in 13 of these there had been ascites at some period of the illness. There were 2 cases of acute peritonitis with ascites. Adhesions between the liver and the neighbouring organs were frequent and sometimes served as channels for collateral circulation. Jaundice occurred in 31 cases. In 3 of these obstruction of the common bile duct by a calculus and in one obstruction from duodenitis were sufficient causes. In the remaining 27 cases the jaundice was closely associated with the amount of fibrosis of the liver, being found most frequently in advanced cases; it was usually a late and grave symptom.

This analysis shows that hepatic cirrhosis usually is but one effect of systemic poisoning which produces degenerative changes in other organs. The splenic tumour and the dilated veins are due partly to portal obstruction, but also seem dependent on the underlying toxic cause, for they are sometimes associated with slight hepatic changes. Hæmatemesis was almost invariably due to some gross lesion, usually to œsophageal varix; in one case it was due to gastric ulcer. Ascites appeared to be independent of the amount of fibrosis of the liver; it usually occurred late. When it occurred early it was generally associated with some form of peritonitis. The large proportion of cases of peritonitis, perihepatitis, and perisplenitis in which ascites was present suggests that these conditions play an active part in its production. (See also "Pleuro-Peritonitis with Hæmorrhagic Effusion from Alcoholism," "REVIEW," Vol. III., p. 451).

Pelvic Gumma in Congenital Syphilis.—

Alfred Fournier (*Bulletin de l'Académie de Méd.*, Oct. 24, p. 310).—A man, aged 34, had a tumour of the pelvis which had been diagnosed as inoperable sarcoma. He was pale, weak and emaciated. For several months he had suffered discomfort in the pelvis, with symptoms of progressive compression of the bladder and rectum, frequent and difficult micturition, constipation, often requiring the use of enemata or aperients, and ribbon-like stools. Palpation of the abdomen and rectal examination revealed an extensive layer of infiltration, which lined the pelvic cavity and projected in front on the left side. Above the pubis for 2 or 3 finger-breadths and in the left iliac fossa a little higher, a tumour was felt. It was about $\frac{3}{4}$ in. thick, seemed to be reflected on to the bladder, and thence descended into the pelvic cavity. The rectum was free in its lower part, but higher up was surrounded by a mass which constricted it, so that the finger could be passed only with difficulty and pain. There were

some indistinct masses on the right side as large as hazel-nuts, and a sort of cushion which seemed to attach the whole mass to the iliac fossa. Throughout the infiltration was hard and wooden to the touch. There was no glandular enlargement. Of 15 brothers and sisters 12 had died, mostly in childhood.

The patient was minutely examined by M. Fournier for signs of syphilis with negative results. Only an ophthalmoscopic examination remained to be made. Some hours later M. Fournier saw a brother of the patient, aged 36, who came to tell him that his father had suffered from syphilis. He showed no signs of hereditary syphilis and was referred to the same ophthalmologist. The younger brother showed slight irregularities of the retinal pigment which raised suspicions, but in the elder these were accompanied by traces of chronic choroiditis, slight arteritis, and periarteritis, which proved the existence of hereditary syphilis.

Injections of $\frac{1}{2}$ gr. of mercurial benzoate and 60-90 gr. of potassium iodide were given daily. In less than a week the patient seemed to be improving, and 10 days later there was no doubt that the tumour was resolving. By the twentieth day it had diminished by a third, and in 2 months it was completely absorbed. The patient was then free from rectal and vesical symptoms, was in perfect health, and had gained over 17 $\frac{1}{2}$ lb.

M. Fournier regards the tumour as a gumma situated in the cellular tissue of the pelvis invading, enveloping, and compressing the viscera rather than involving their parenchyma. He regards the case as unique in several respects. He never before saw a case in which a gumma infiltrated the pelvis and involved the viscera, so as to closely simulate a malignant tumour, and responded so rapidly and completely to specific treatment. Further, this occurred in a case not of acquired but hereditary syphilis at the age of 34, while neither the patient nor his brother showed noticeable signs of the disease. It is now recognised that hereditary syphilis is not solely a condition of

childhood and adolescence. The writer has seen its manifestations at the ages of 40, 60 or even later, but cases in which it reveals itself for the first time in middle life are infrequent. Only in the retina of the elder brother were definite changes found.

The Diplococcus of Acute Rheumatism.

—Fritz Meyer (*Zeitschr. f. Klin. Med.*, Bd. 46, Hft. 5 & 6, p. 311).—Many observers have lately described a form of streptococcus, which they believe to be the cause of acute rheumatism. Thus Wasserman produced multiple non-purulent synovitis in an animal by the injection of a streptococcus obtained from a fatal case of chorea and endocarditis, and his results have been confirmed by others, including Poynton and Payne. In more than 30 cases of acute rheumatism the writer attempted by a variety of methods to cultivate a bacterium from the blood and synovial exudation, but, as usually happens, failed. For the past 2 years he has made cultures from the tonsils, which are inflamed in more than 50 per cent. of all cases of acute rheumatism. In peptone broth an impure culture containing staphylococci, diplococci, and bacilli results. If this is injected into a rabbit's vein the joints soon swell. The exudation in the joint which first enlarges, generally the knee, always contains one bacterium, pure cultures of which are thus readily obtained. Either this organism has a special affinity for the joints, or attacks them first because it is the most virulent microbe present. The latter alternative is excluded by the fact that the organisms are comparatively benign, never produce suppuration as do ordinary virulent staphylococci or streptococci, and seldom prove fatal. They are small diplococci, measuring 0.5 micron in diameter, and are slightly oval without the pronounced lancet-like appearance of the pneumococcus. Though they occur in the tissues as diplococci, in liquid culture media they may form short chains or heaps. They are facultative anaerobes, but

however cultivated outside the body they die in 3 or 4 days. All attempts to increase their virulence and to convert them into pyogenic organisms failed. Intravenous injections of pure cultures in rabbits produced (1) multiple articular effusions, (2) endocarditis, and (3) inflammation of serous membranes. The first articular swelling usually appear 6 to 8 days after infection. The swelling and pain persist for a few days in one joint, then usually subside, and appear in another. The exudation contains much fibrin and a few diplococci. Pure cultures may be obtained from the synovial fluid during the first week; after that time it is sterile. Microscopically the process is seen to be limited to the synovia, in which are numerous extracellular heaps of cocci. *Restitutio ad integrum* follows. Endocarditis is not such a constant lesion. Those animals in which it occurs usually die within 7 to 21 days, with emaciation, dyspnoea, frequent pulse, and pyrexia. In 21 of 100 animals there were more or less marked valvular vegetations, which sometimes completely filled the ventricle. The blood from the ventricle and parts of the papillomatous growths were often sterile, but initially diplococci were invariably present. The valves had not been injured experimentally, though this was formerly supposed to be necessary for the production of endocarditis. Unlike the condition present in the endocarditis produced by other bacteria, such as the streptococcus pyogenes, necrosis or ulceration was never produced, and the nuclei of the cells were always well stained. A vegetation began as a thrombus, which contained crowds of diplococci. As it grew the organisms remained limited to its core and eventually perished. Hence the apparent sterility of older vegetations and the ventricular blood, and the production of non-infective infarcts.

Earlier experimenters killed the animal by producing acute sepsis, or, if they used attenuated cultures, produced pyæmic, not rheumatic arthritis. Löffler's experiments with the streptococcus obtained from scarlatinal pharyn-

gitis were an exception, as this organism appears to have an affinity for the joints comparable to that possessed by the writer's diplococcus. This may explain the frequency of post-scarlatinal rheumatism. The proof that the writer's microbe has an affinity for the joints is furnished by the following facts:—The streptococcus or staphylococcus pyogenes if injected into the circulation can be recovered from the blood as well as from the joints which become affected. The writer's diplococcus even when injected in enormous and fatal quantities cannot be recovered from the blood, but can be from the joints. Finally, if both pyogenic organisms and diplococci are injected simultaneously the streptococcus or staphylococcus alone can be recovered from the blood, the diplococcus alone from the joints. The special affinity for the endocardium is proved by the fact that in a second series of 100 animals, in which various other bacteria were injected, only 2 cases of endocarditis occurred. A similar diplococcus has been found round the pial vessels in chorea (Poynton and Payne). Even when no pharyngitis is present in rheumatism the organisms may be found in the peritonsillar tissue. They become generalised by the blood vessels and not by the lymphatics. They are not found in normal throats. The writer does not claim that these diplococci are the cause of all cases of rheumatism and chorea. Just as endocarditis may be due to various organisms, but most frequently occurs in rheumatism, so may the arthritis, which appears during typhoid or other acute fever depend on the specific organism of these diseases.

“Sclerœdema.”—A. Buschke (*Berlin. Klin. Woch.*, Oct. 13, p. 955).—A man, who had had “intermittent fever” but never syphilis, was seized with influenza in Feb., 1900. Quinine was given and produced an evanescent roseolous and urticarial eruption. He did not recover his usual health completely, and noticed weakness of the limbs, and stiffness of the back of the neck

and fingers. During the following week this cervical stiffness extended successively to the face, scalp, thorax, abdomen, arms, hands and fingers, back, and gluteal region. The cutaneous stiffness was such that for a time respiration was seriously impeded. Though the œdema had regressed somewhat, it was still marked when the writer first saw the patient on April 27, 1900.

He was a muscular, well nourished man, with normal internal organs, except for slight vesical bacteriuria. The skin over the neck, chin, face, scalp, thorax, abdomen above the umbilicus, back as far as the gluteal region, and arms as far as the elbows was greatly swollen, and of wooden hardness, did not pit on pressure, and could not be picked up in folds. The surface of the skin appeared to be normal and tightly stretched over the infiltrated subcutaneous and, possibly also infiltrated, muscular tissues. The affected skin appeared to be colder than the rest, but showed no disturbances of sensibility or electric conductivity. It was white, anæmic, smooth, and shiny, and there were no signs of inflammation. The stiffness of the skin impeded the movements of the head, and caused the face to be mask-like and expressionless. At first sight the case appeared to be one of acute scleroderma. That it was not was rendered probable by the absence of infiltration of the superficial layers of the skin. Other diseases to which a slight resemblance might be traced, such as myxœdema, trichinosis, dermatomyositis, or œdema from lymphatic or venous obstruction were excluded. The condition resembled sclerema neonatorum most closely, but was distinguished from it by its benign course.

Under intermittent courses of massage the condition slowly improved. At the end of a year the solid œdema of the trunk and limbs had disappeared. The infiltration of the skin of the neck and scalp persisted longer, but on July 24, 1902, the only abnormality—except in the face—was slight loss of cutaneous elasticity. The skin of the cheeks apparently had become permanently

thick and rigid, and resembled that of elephantiasis without the scaliness, pigmentation, and atrophy. The features were still expressionless. The only complaint was that the fingers became numb and tingled if placed in cold water.

When the man was shown before the Berlin Dermatological Society 2 years ago Blaschko stated that he had seen 2 similar cases and did not consider that scleroderma was excluded by the fact that the infiltration was deeply seated. The deep variety might, he thought, be termed "sclerofascia." He lately demonstrated another case in which the disease had begun 20 years previously after scarlet fever. Complete *restitutio ad integrum* had occurred except for small deeply-seated patches of thickening. Possibly some cases reported as acute scleroderma were analogous to these. The writer considers that the condition, though on inspection resembling scleroderma, is distinct from it. Apart from the difference of localisation, the infiltration when absorbed is not followed by the atrophy characteristic of scleroderma, and, when unabsorbed, leads to hypertrophy of the subcutaneous cellular tissue, which in scleroderma does not occur.

The Bacillus Enteritidis (B. Enteritidis Derbiensis) of the Derby Outbreak of Food Poisoning. — The Derby outbreak of food poisoning is described in another column ("REVIEW," p. 710). We are indebted to Prof. Sheridan Delépine for these illustrations showing the appearance of the jelly of the infected pork pies.

Photographs of sections of the jelly as seen under a low power of the microscope ($\times 50$) are shown. A magnification of 10 to 20 diameters is sufficient to recognize these colonies which are rounded or oval, granular, and yellowish brown. Prof. Delépine recommends this method of inspection of jellies for the purpose of rapid detection of noxious pies. A small amount of jelly and meat removed through the vent-hole would be sufficient for the purpose.

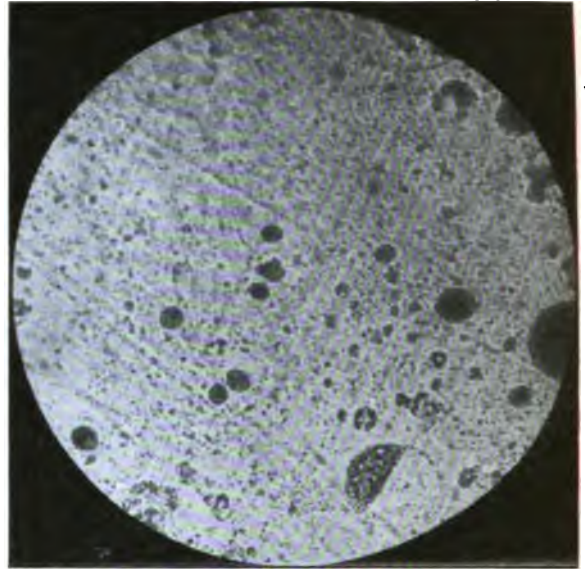


FIG. 1.

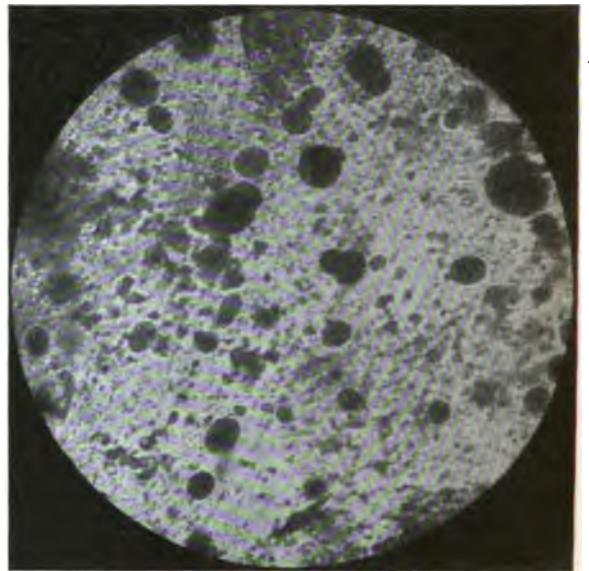


FIG. 2.

FIG. 1.—Jelly under the crust.

FIG. 2.—Jelly in the centre of the same pie.
From preparations by Prof. Delépine.

THERAPEUTICS.

Resuscitation by Rhythmical Traction of the Tongue in Carbonic Oxide Poisoning.

—J. V. Laborde (*Bulletin de l'Académie de Méd.*, Oct. 14, p. 252).—The essential action of carbonic oxide is to fix the hæmoglobin of the red corpuscles, and by displacing their oxygen abolish their respiratory function. In the case of M. Zola it has been stated that rhythmical traction of the tongue, so efficacious in ordinary cases of asphyxia (see "REVIEW," Vol. II., pp. 226 and 498, and Vol. III., p. 572) was useless, and that only inhalations of oxygen would have been useful. This is not true. As the following cases show, rhythmical traction is the best procedure in this as in other varieties of asphyxia. It has the great advantage that it can be applied even by unskilled persons, and thus life may be saved when delay would be fatal.

CASE 1.—A boy, aged 6, fell into the water. His apparently lifeless body was recovered after 35–40 minutes immersion. There was neither pulse nor respiration. Friction and the application of hot cloths proved useless. The jaws were forced open and rhythmical traction of the tongue and titillation of the fauces were practised. He vomited and respiration was at once established. A fortnight afterwards he was found pale, limp, and apparently dead, neither pulse nor respiration being perceptible. The grate of the room was filled with glowing embers emitting a peculiar odour. He was at once removed to another room, and traction of the tongue was commenced. Respiration was established in 2 minutes, and he recovered.

CASE 2.—A young woman who had attempted suicide by inhaling the fumes of charcoal was found apparently lifeless by two custom-house officers. Her husband had already opened the window but his efforts to restore animation were

fruitless. The ring of a key was forced between the teeth, the tongue was seized and rhythmical traction was practised by the officers, who were familiar with this method in cases of drowning. After 5 minutes the patient stiffened one arm and groaned, but again became inert. On continuing the traction for another 10 minutes she extended her arm and opened her eyes. The admission of air completed her recovery.

CASE 3.—A girl of 17 attempted suicide by inhalation of charcoal fumes. When seen about 2 minutes after removal to the open air she was insensible, and the corneal and pupillary reflexes were absent. There were general cyanosis, irregular gasping respiration, and a small and very irregular pulse. Friction, cold affusions, artificial respiration and inhalations of oxygen produced no improvement, and death seemed imminent. The jaws were strongly clenched but were forced open, and the tongue was grasped with forceps and drawn forward in spite of strong resistance. After a few tractions she moved her head and opened her eyes. She then relapsed, to repeat the action in a few minutes. After half-an-hour the left cornea was sensitive, and after another half-an-hour the right cornea, while the pulse and respiration had improved, but the coma still persisted. She was carried in a carriage a distance of over a mile, and seemed to improve on the way, but on being put to bed she relapsed, and only the left corneal reflex could be obtained. After tractions of the tongue had been continued for 2 hours inhalations of oxygen were again administered (traction being continued), and in half-an-hour she had improved sufficiently for the medical attendant to leave her for a time, at 1.30 a.m. At 8 a.m. her state seemed unchanged, the corneæ being, if anything, less sensitive. Oxygen was administered without

traction of the tongue, and the face which had been pale became congested, and slightly cyanosed. Respiration stopped, the pulse became interceptible, and she seemed to be dead. The tongue was again grasped with forceps and tractions were recommenced. She again gradually improved. At 5 p.m. she inhaled a little ammonia and swallowed some kola wine and continued to improve, but coma persisted for 3 days and the sensibility of the limbs did not return until the fifth day. On the sixth day petechiæ appeared on the chest and feet. The pulse remained irregular for some time and for two months there were occasional intermissions.

The writer believes the tractions of the tongue stimulated the respiratory reflex, while the oxygen enabled such corpuscles as were not entirely poisoned to transfer it to the tissues. Both were thus indispensable in the treatment.

CASE 4.—A man, aged 24, entered the boiler of a torpedo boat, which had been filled with carbon monoxide, and speedily became unconscious. A comrade, aged 36, who went to his assistance also lost consciousness and fell into a narrow space between the boiler and a partition. On the arrival of the surgeon the port holes were opened and the boiler was ventilated by a fan. The younger patient had fallen to the bottom of the boiler and could be raised so that his head projected from the manhole by which he had entered, but it was impossible to extricate his body until it had been disengaged from that of his comrade which blocked the passage. Both men were completely unconscious, with livid faces, and neither pulse nor respiration was perceptible. The position of the second man rendered it impossible to employ the ordinary methods of artificial respiration; rhythmical tractions of tongue were made with a pair of small forceps. After a few minutes there was a sort of hiccough and respiration was re-established, but on ceasing the traction he at once relapsed. Traction was

renewed and continued till respiration became regular. He complained for some hours of weakness, heaviness, and pain in the head, but was able to return to duty in 4 days. The first patient had in the meantime been supported so that his head projected from the boiler, and similar treatment had been followed. When his body could be disengaged he was taken on deck, and thence to hospital, but rhythmical tractions of the tongue, artificial respiration, and other methods of resuscitation were maintained for 4 hours without success.

CASE 5.—A man attending to a captive balloon filled with illuminating gas became asphyxiated. He lay on the ground cyanosed and breathing with difficulty. Artificial respiration had been employed before the arrival of the surgeon. The jaws were so rigid that a tooth had to be removed to allow the traction of the tongue. The tongue was grasped with an artery forceps and traction practised without cessation for 45 minutes, when he was considered out of danger. He was removed to hospital in an ambulance, but on the way there were two relapses, which made it necessary to repeat the traction for short periods, after which he recovered.

CASE 6.—A medical man and his daughter retired for the night in rooms in the ante-chamber of which was a slight escape of gas. After a light and restless sleep, the doctor experienced about 5 a.m., great uneasiness, vertigo, dyspnoea, and threatened syncope. He raised himself to get out of bed, but could not, and remained in a state of stupor in a half-sitting position for some time until he was roused by the sound of a heavy fall in the girl's room, and suddenly realized that his daughter and himself were suffering from gas poisoning. With an effort he rolled out of bed, and unable to walk he crawled to his daughter's room and opened the window. After a few deep respirations he turned to find her unconscious on the floor. Her face was pale, her eyes were half closed, respiration was not perceptible, and she was apparently dead. He commenced rhythmical traction of the

tongue, at the same time making intermittent pressure on the chest. In about half-an-hour the first attempt at respiration—a sort of hiccough—occurred. Gradually respiratory movements were established, and they regained their normal character after an hour's work. Simultaneously she opened her eyes and her colour returned, with signs of consciousness. Next day traction of the tongue had to be performed at intervals, as the respiration was feeble and threatened to cease. She ultimately recovered.

The writer regards rhythmical traction of the tongue as the best treatment in all cases of apparent death from carbon monoxide poisoning.

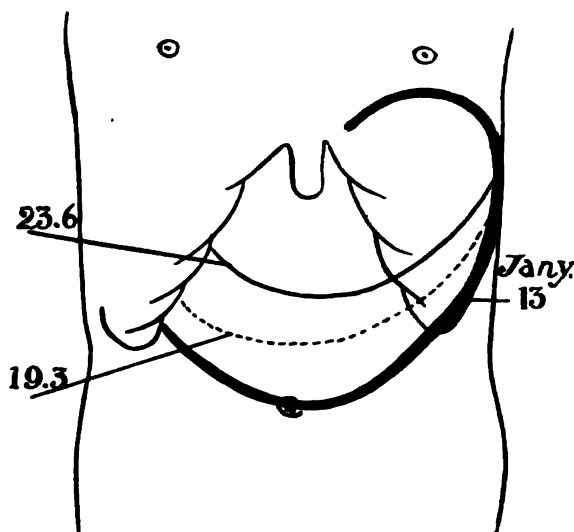
Treatment of Atonic Dilatation of the Stomach by High-Frequency Currents.—Alexander Crombie, M.D., and T. J. Bokenham, M.R.C.S., L.R.C.P. (*Lancet*, Oct. 18, p. 1043).—The unsatisfactory results of the treatment of atonic dilatation of the stomach by the ordinary methods have led the writers to try in 17 cases rapid oscillatory currents of high voltage. The results were gratifying. The duration of the cases varied from a few months to 15 years. There were dyspeptic symptoms of greater or less severity accompanied by neurasthenia. In 3 cases the condition seemed to depend on mental strain. In all the others the dilatation was probably primary and due to obvious causes, and the neurasthenia was the result of the consequent defective digestion, malnutrition, and auto-intoxication. After 10 to 20 applications the stomach assumed its normal position and size. At the same time, in all but 2 cases, the normal process of digestion was restored, but it was considered advisable to continue the dietary regimen for some time. There was a short relapse of indigestion in one case and of dilatation in another, after dietetic indiscretions. In one case there was no improvement in digestion apparently owing to a radical fault in the gastric juice (hypochlorhydria),

although the stomach remained of normal size. This patient is slowly improving under treatment on general principles. The stomach continued normal in size and position for at least 6 weeks after the electric treatment was discontinued.

The immediate effect of the high-frequency applications is to give tone to the unstriated fibres which enables them to contract and to diminish the size of the organ. The improvement in digestion which follows is probably the result of the restoration of a more normal condition of the circulation and blood-supply to the gastric glands consequent on the return of the stomach to its natural size and position. Apparently it is not due to any special stimulation of the gastric glands, because when there is a radical fault in the secretion no improvement in this respect follows the reduction of the dimensions of the stomach although the electric treatment is continued. The tone given to the unstriated muscular fibres enables the stomach to empty itself after each meal, the retention of imperfectly digested food ceases, and with this the absorption of abnormal products of digestion and the consequent auto-intoxication and neurasthenia. Besides the daily application of the high-frequency current a diet calculated to reduce the difficulties of a dilated stomach was given. The amount of fluid taken with meals was reduced to a minimum. The fluid required by the organism was taken in the form of hot water not less than three-quarters of an hour before meals. Before the commencement of electrical treatment this diet had been continued in some instances for some time, in one case 6 months, with only slight benefit. Marked improvement immediately followed the use of the high-frequency current, with a practical and, so far, permanent "cure" in a few weeks. In stout people there was, as a rule, loss of weight during the treatment, but the thin and emaciated steadily gained weight. In only one case was lavage thought advisable after beginning the treatment.

TECHNIQUE.—The apparatus consists of a Rhumkorff coil giving a "12-inch spark" with heavy discharge. The interruption of the primary circuit is effected by the Mackenzie Davidson break, as made by Cox. This current is applied in a variety of ways by means of special electrodes, which may be classed as (a) monopolar brush electrodes; (b) glass or ebonite "condenser" electrodes of various forms and capacity; and (c) moistened plate electrodes of flexible sheet-lead and of large size. (a) In the early cases treated the patient was placed on a couch and the region of the stomach was "sprayed" by a brush electrode held at a distance just beyond that at which a direct spark would pass between the electrode and the skin. The effect experienced was described as similar to the dropping of a shower of warm sand on the skin. After a few minutes peristaltic movements of the stomach were often distinctly felt. (b) A convenient condenser electrode can be made by filling a large flat-bottomed flask with salt water and passing a wire through an indiarubber cork fitted to its neck, the free end of the wire being connected to the resonator. (c) The lead foil electrode is of such a size as to cover the whole gastric area; close contact is secured by interposing a layer of wet flannel between the metal and the skin. With this the patient usually feels little over the area of application, and the quantity of the charge depends upon the electrostatic capacity of the individual. The effect of the application is in most cases invigorating.

CASE.—The patient was a middle-aged man. A succession of severe mental shocks brought on a condition of profound neurasthenia and obstinate dyspepsia. The stomach on Jan. 13, 1902, was enlarged to the level of the umbilicus (Fig.). It was never empty of food; the contents gave loud splashing on manipulation of the epigastrium. Galvano-faradisation and drugs had failed. On Feb. 22 high-frequency treatment thrice weekly was commenced. By March 19 the stomach had contracted $1\frac{1}{2}$ in. in the vertical direction; about a month later its size



was practically normal. No splashing could be evoked and the dyspeptic symptoms had practically disappeared. On Sept. 10 he was practically cured.

Treatment of Myopathy (Pseudo-Hypertrophic Paralysis, etc.)—Sir W. Gowers (*Brit. Med. Jour.*, July 12, p. 92).—Muscular exercise, adapted in degree to the muscular state, is the one agent which distinctly hinders the failure of muscular strength and nutrition. Neither electricity nor massage exerts more than a small fraction of the influence of voluntary use. Without it no definite effect can be observed from their employment; with it they seem sometimes to do a little good, and upward massage promotes the circulation in the muscles and the renewal of the blood plasma, from which their nutritional elements are derived.

When contractures or any accidental causes arrest the voluntary use of the muscles for even a few months the weakness and the wasting rapidly increase, and speedily reach a degree from which there is no recovery. Contracture occurs readily in the muscles in which there is

much increase of connective tissue, especially in the calf muscles, but the tendency to it varies. In some cases it prevents standing and walking long before this would be lost from the weakness of the muscles of the upper leg. Then division of the Achilles tendons is imperative. In one case this contraction occurred so early, that at the age of 5 the ability to stand would soon have been lost; tenotomy enabled the patient to walk until 12, and then it again became necessary. It preserved the ability for years; at 20 the patient could still walk 3 miles.

When the contracture occurs late, and the weakness of the muscles of the knee and hip is great, the question may arise whether the rest the operation entails will not augment the weakness, so that tenotomy is useless. But the rest need be but brief, and its effect may be lessened by movements while lying. If the contracture is not extreme it may be diminished without tenotomy by an apparatus devised by the writer in which elastic traction on a piece of leather around the foot is made from a piece around the leg, the two being united by a narrow piece behind the heel. This bends, but has sufficient vertical resistance to prevent pressure on the skin, which, if continuous, soon becomes intolerable. Worn during rest and indoors, the effect of the very gentle constant elastic traction is remarkable.

At the knee and hip the flexors are contracted—a consequence of flexion when the patient sits or lies. This usually attends a degree of weakness which precludes any prospect of good from operation and emphasizes the importance of maintaining as long as possible the upright posture. When the patient can only sit, not only do these contractions of the hip and knee occur, but the weakness of the muscles of the trunk induces inevitably an inclination to one side, which leads to curvature of the spine with its effects on the movements of the chest and the chronic changes in the lungs.

Elsewhere, especially in the arms, the essential element in treatment is the same persevering efforts to exercise the muscles. For

this gentle gymnastic exercises are extremely useful, especially the various apparatus for developing the muscles of the arms. But it is difficult to secure the necessary perseverance without the incentive of games. Fencing is a most effective exercise when the failure of the arms is slight. Cycling gives some exercise to the arms as well as to the legs, and a tricycle is often practicable when a bicycle is not. Lawn tennis involves too severe effort to be commonly available, but ping-pong necessitates the varied but gentle use of many muscles, and is therefore serviceable. When the movements of the hand begin to be impaired playing the piano is very useful.

Treatment of Megrim.—Byrom Bramwell, M.D., F.R.C.P.E. (*Clinical Studies*, Oct., p. 48). —A woman, aged 31, had suffered for many years from severe headaches. During the past year they occurred on an average thrice weekly. The pain was usually worse on the right side of the head, but the left side was also affected. She often awoke with a headache. The attacks always lasted for many hours, sometimes for 48. During them she felt giddy and sick and she sometimes vomited. Between the attacks she felt perfectly well. Many remedies including phenazone, phenacetin, and arsenic, had proved useless. A plaster at the back of the neck relieved her for a time.

The optic discs and the refraction were normal. She was put upon a diet of milk, fish, and white meat, and ordered to take 7 gr. of salicylate of sodium and 2 minims of liq. arsenicalis thrice daily and 20 gr. of phenacetin as soon as an attack occurred. If one powder did not relieve the headache she was ordered to take a second at the end of an hour, and if that did not relieve her, to take a third at the end of another hour. During the following week she was much better, having only one slight headache, which was relieved by two of the powders. In the following 3 weeks she had only one severe headache.

Phenacetin is the most valuable remedy for the relief of megrim. It is often given in inadequate doses. It must be given in the large doses described above. Rarely more than 3 20 gr. powders given hourly are necessary. In prescribing the writer orders "Not more than 3 powders to be taken in one day." He orders a diet of milk, fish, and white meat, and prohibits sugar and red meat (beef and mutton). Regulation of diet is particularly important if there is reason to suppose that the patient is gouty. All sources of irritation, such as errors of refraction or diseased teeth, which may act as exciting causes, must be removed. The patient must be put in the best conditions conducive to health in regard to exercise, work, play, fresh air, sleep, and climate. In many cases a combination of salicylate of sodium with arsenic is very beneficial—7-10 gr. of the salicylate and 2 or 3 minims of the liquor arsenicalis thrice daily.

Yeast in the Treatment of Eruptive Fevers and Erysipelas.—(*Semaine Méd.*, Oct. 29, p. 359).—Since good results have been obtained from the use of yeast in furunculosis, it has also been used in the eruptive fevers. Presta and Tarruella of Barcelona found that small-pox patients treated in the papular and vesicular stage recovered in from 10 to 15 days by lysis. In from 3 to 5 days the temperature and pulse became normal. The eruption did not become pustular. In some cases, a milky serous discharge exuded from the vesicles, especially those on the face, and formed crusts, but these did not become confluent. From many vesicles no exudation occurred and they were re-absorbed. Redness and œdema of the face disappeared in from 25 to 40 hours. From the tenth to twelfth day the serous crusts were cast off and the skin below them was pale. Instead of the cicatrised ulcers leaving permanent marks hard faintly pink elevations

were seen which disappeared in 20 days at latest leaving no scar. No complications occurred, and the furunculosis, abscess, etc., so frequently seen during convalescence, were absent.

The writers have treated 28 cases of measles and 17 of scarlet fever. There was one death among the latter. In the other cases the temperature became normal in from 30 to 36 hours, and there was marked absence of complications. During the epidemic in which these observations were made there were numerous complications in cases treated by the usual methods, and the duration was from 20 to 30 days. In cases treated by yeast the disease lasted only 6 days and resembled that seen in mild scarlatina or measles.

In 24 cases of erysipelas the results were satisfactory. In all the cases bacteriological diagnosis was employed, and cultures of the streptococci were made and inoculated into animals to determine their virulence. If the disease were treated within the first 40 hours it was arrested, the œdema and redness gradually disappeared, and the vesicles dried up. After 4 days, at the longest, the local lesion was reduced to a painless and rose coloured patch of infiltrated skin. This colour disappeared by the sixth day, when there was desquamation. At the end of 40 hours the constitutional symptoms were ameliorated, and at the end of 3 days they disappeared. In cases treated as late as the 8th or 12th day the results were less rapid, but still were marked.

In all cases 4 to 6 egg-spoonfuls of dry yeast were given in 24 hours. If yeast is injected into animals within 3 hours of the injection of streptococci or staphylococci infection is diminished or prevented. This action is due not to soluble secretions produced by the yeast, but to its protoplasm, for if yeast and streptococci are grown on the same medium the latter did not begin to agglutinate till a certain number of yeast cells are set free and come into contact with them.

SURGERY.

Treatment of Ascites from Portal Obstruction by Epiploexy.—Prof. Lanz (*Corr.-Bl. für Schweiz. Aerzte*, Sept. 15, p. 554).—

CASE 1.—A woman, aged 54, began to suffer from abdominal pain and enlargement in the autumn of 1901. Symptoms of hepatic cirrhosis rapidly developed, and in Feb., 1902, she became bedridden. In Jan., 1902, 24½ and 19 pints of ascitic fluid were removed, respectively, by 2 aspirations. Three weeks later 35 pints were obtained, but the abdomen re-filled in a week. Alcoholism and syphilis were denied. The liver dulness was practically confined to the level of the seventh rib. The splenic dulness was not obtainable. There was extreme emaciation. The circumference at the umbilicus was 31 in. The legs were not oedematous and the urine was normal.

On March 26, 1902, laparotomy was performed under ethyl bromide. About 26 pints of ascitic fluid escaped. The liver was uneven, tough, and granular with cicatricial depressions. The peritoneal coat was white and thickened, and the lower edge was fibrous and adherent to the transverse colon. The omentum was fixed by a continuous suture to the wound of the parietal peritoneum, which was 4 in. long. The muscular layer and skin were sutured separately, and a pad was placed over all, the pressure of which would keep the parietal and visceral layers of the peritoneum in close contact. A tumour of the right ovary, of the size of a hen's egg, was found and removed. Microscopically it had the structure of a bronchocele, the glandular alveoli containing colloid material. There was no trace of normal ovarian tissue. On April 5 the continuous skin suture was removed. The patient got up on April 8, and was discharged on April 10. She had lost her cachectic appearance, and was able

to walk without dyspnoea. The liver dulness extended in the right nipple line from the sixth rib to the costal arch, and there was no sign of ascites. On April 30 she felt quite well, and appetite and strength were increasing daily. On June 17 her medical attendant wrote that though she had not increased in weight she considered herself completely cured. The abdominal walls were retracted rather than prominent, and the ascites had not recurred.

CASE 2.—A man, aged 35, was admitted to hospital on June 13, 1902. The abdomen had begun to swell 4 years before, and ascites soon supervened. In spite of treatment his condition deteriorated, the legs and feet became oedematous, and there was increasing dyspnoea. The appetite was good and he was still able to walk. Alcoholism was denied. There was extreme cyanosis. The liver extended from the seventh rib above to nearly 5 in. below the ensiform cartilage. Its edge was tough, thick, and irregular. The spleen was not enlarged. The urine contained no albumin, sugar, or urobilin.

On June 18 2 c.c. of a 1 per cent. solution of cocaine were injected to the right of the linea alba. General anæsthesia was avoided on account of feebleness of the heart and the congestion and compression of the lungs. An abdominal incision 4 in. long was made, and the peritoneum was punctured through the posterior layer of the sheath of the rectus so that the fluid escaped in a thin jet. This precaution obviated a too sudden fall of abdominal pressure. After about 35 pints of ascitic fluid had escaped the peritoneum was opened freely, and the iliac and pelvic regions were dried with gauze sponges. The liver was cyanotic and granular. The omentum was fastened on either side to the peritoneum, its free edge being included in the continuous suture

which closed the peritoneal wound. The muscular and cutaneous layers were sutured separately, and firm pressure was applied. On June 28 the sutures were removed. There was some slight ascites. On July 3 the patient was discharged. The cyanosis had disappeared, and though there was still some fluid in the abdomen, he felt much better.

The immediate and lasting benefit obtained in the first case was remarkable, but the ultimate result of the second is still uncertain. The operation is extremely easy, but is not a trivial one for patients with advanced hepatic cirrhosis and ascites. There appears to be no advantage in suturing the omentum extraperitoneally between the recti muscles—a proceeding employed by von Eiselsberg in 2 cases of Talma's. ("REVIEW," Vol. I., p. 121). Ito and Omi have recently shown (*Dtsch. Zeitschr. f. Chir.*, Bd. 62) that the chief object to produce is extensive adhesions of the abdominal viscera to one another and to the abdominal wall. The writer believes that the operation of epiploxy is not only justifiable, but that it should be performed much earlier than it was in most of the reported cases. Portal obstruction is the cause of death in hepatic cirrhosis, and its permanent relief may prolong life in comfort for an indefinite period. Epiploxy has been performed in about 60 cases, with about 40 per cent. of "cures."

See also "REVIEW," Vol. IV., p. 85.

Diseases of the Urachus and Umbilicus.

—Wheelton Hind, M.D., F.R.C.S. (*Brit. Med. Jour.*, July 26, p. 242).—Diseases of the urachus appear to be very rare.

CASE 1.—In a male child the umbilical cord did not separate speedily. At the age of 5 weeks the umbilicus began to weep, and in a few hours it exuded fluid copiously. As this fluid increased the amount of urine passed by the urethra diminished, and the fluid coming from the umbilicus was found to be urine. Extravasation

took place around the umbilicus, the skin became red, and the tissues swollen and boggy. The temperature rose, the child became very ill, the extravasation spread rapidly all over the abdomen, and the case terminated fatally in a few days.

There was no doubt a patent urachus connecting the bladder with the umbilicus. The urachus generally does not pass beyond the umbilicus, but probably in this case a portion of it was ligatured in the cord. Obliteration did not occur, and in time the cicatrix broke down. As the tube was of greater calibre than the small male urethra, contraction of the bladder forced the urine along the urachus rather than the urethra. In another case the writer would cut down and obliterate the urachus, though infection of the peritoneum would be apt to occur. Expectant treatment seems to give no hope.

CASE 2.—A girl, aged 6, complained of pain in the abdomen mid-way between the umbilicus and pubes. There were a muco-purulent discharge from the umbilicus and an elongated fusiform lump, exquisitely tender, behind and between the recti muscles. A probe passed downwards behind the recti for about 1½ in. Next morning there were a discharge of creamy pus from the umbilicus and diminution of the pain and swelling. Pressure over the swelling caused pus to well up at the umbilicus. In a few days healing took place.

This was evidently an abscess in the patent upper part of the urachus, infection probably having taken place through the umbilicus. Knowing the proximity of the urachus to the peritoneum the writer had arranged to cut down on the abscess that there might be no danger of its bursting internally.

CASE 3.—A girl, aged 4, had a chronic discharge from the navel and acute paroxysmal pain below the umbilicus. The parents said that her sufferings were unbearable. A probe passed through the umbilicus passed downwards for some distance. Thinking that there was some occasional occlusion of the tube and retention

of its contents, and that the pain might be due to this cause, the writer passed a probe and cut down on the urachus. It was patent up to the apex of the bladder, and there may have been a small communication with that organ. He ligatured the urachus, treating it as in removal of the appendix, and stitched up the wound in layers as after laparotomy. The peritoneum was accidentally opened, but no ill resulted. Recovery followed.

Little papillomatous growths occasionally arise from the umbilicus. Whether they are connected with the urachus cannot be said, but occasionally there is a small canal which secretes moisture. Treatment consists in removal by evulsion or ligature and gentle cauterization of the base. Granulations at the umbilicus are not, however, always of a simple character, as the following case shows.

CASE 4.—A boy, aged 4, had moist red granulations at the umbilicus and a discharge. These were removed and cauterized, but soon returned. A probe could be passed directly backwards for some 2 to 3 in. The opening was enlarged by incision and some grumous material came away. The finger entered a cavity formed by matted intestines covered by small tubercles, some of which were caseating. The case was one of tuberculous peritonitis, without fluid. The cavity did not appear to be absolutely shut off from the general peritoneum, so it was thought unwise to do much. The cavity was swabbed as well as could be done through the limited opening, and a strip of gauze left in for drainage. Recovery followed.

Probably tuberculous injection of the umbilicus takes place from within. Malignant disease of the omentum may spread through a fistula to the umbilicus. More commonly there are secondary deposits of malignant growths round the umbilicus. In one case the diagnosis of malignant disease of the liver was clinched at an early stage before the growth itself could be felt by the discovery of a hard ring of growth about the umbilicus.

Malignant affection of the umbilicus occurred in a case in which the writer had removed a large ovarian cyst with much intra-cystic growth 2 years before. There was a discharge from the umbilicus, and an abdominal tumour filled the pelvis. Exploration showed hundreds of little growths all over the peritoneal surface of the intestines and parietes and thick masses in the omentum and pelvis. Removal was impossible, but the writer explored the umbilicus from within, and curiously nothing was adherent to it. The peritoneum formed a normal dimple, and was not thickened or affected in the neighbourhood, but the infection was probably secondary to growths in the liver.

Ruptured Pyonephrosis: Abdominal Section.—John Edgar, M.A., B.Sc., M.B., F.F.P.S.G. (*Scottish Med. and Surg. Jour.*, Nov., p. 427).—A woman, aged 21, was admitted to hospital on Jan. 18, 1902, complaining of a painful mass in the right lumbar region of 3 months' duration. Normal labour occurred on Sept. 2, 1901. A week or two afterwards she began to feel chilly at times, and now and then she perspired profusely, especially at nights. Five weeks after the confinement a painful lump appeared in the right lumbar region. A couple of weeks afterwards it began to pain her considerably. The pain was of a dull, dragging character, and was almost constant. The lump enlarged, she grew weaker and more anæmic, and the night sweats continued.

She was anæmic, emaciated, and feeble. The temperature ranged between 98° and 99·6°, and the pulse, though somewhat compressible, was of normal rate. The urine was faintly acid, of s.g. 1025, and purulent; but there was only as much albumin as could be accounted for by the pus. A fluctuant mass, measuring 6 in. vertically and 7½ in. transversely, bulged in the right lumbar region. Its upper border was 3 in. above, and its lower border 3 in. below, the level of the umbilicus. Towards the left it

reached $2\frac{1}{2}$ in. beyond the middle line. The ascending colon lay superficial to it. Its surface was smooth, and there was a tender spot slightly below the lower costal margin in the axillary line. The percussion note was dull, and the area of dulness was continuous with the hepatic. Evidently the mass was renal; probably it was a large pyonephrosis.

On Jan. 24 she was suddenly seized with severe cramp-like pains in the right lumbar region with symptoms of collapse—pallor, vomiting, cold clammy perspiration, a rectal temperature of 96° , and a very small and slow (52) pulse. Later in the day the temperature rose to 101.4° , and the pulse to 130. The respirations were 36 and the abdomen was distended and tender. The writer did not see her till the following morning, when she apparently was moribund. Her temperature had fallen to 98.6° . The pulse was scarcely perceptible, and was so rapid that it could hardly be counted. The expression was anxious and the features were pinched. The mass in the right lumbar region could no longer be felt, and the abdomen was uniformly distended and tender. The writer opened the abdomen, as this was the only chance. Under ether he made an incision through the right linea semilunaris, and let out a large quantity of thin greenish-yellow pus. A constant stream of normal saline solution was allowed to flow into the abdominal cavity while the coils of intestine were gently separated. The distended kidney was brought into view. A small opening was discovered on its outer margin and was enlarged. Thick pus was washed out. After making a small incision in the lumbar region a couple of drainage tubes were passed into the kidney, and a glass tube was passed through the first incision into the peritoneal cavity. The latter incision was sutured above and below the tube. As the patient was collapsed, some saline solution was left in the abdominal cavity, a pint and a half were infused into the axilla, and $\frac{3}{8}$ gr. of strychnine was injected hypodermically. Nutrient enemata, containing brandy, were then administered every 4 hours.

On the third day the temperature rose to 103.6° , and the pulse to 152; but after that the temperature never rose above 101.8° . It fluctuated for about 3 weeks, and then remained normal. During this time there was some diarrhoea. The glass tube was removed on the fifth day. The kidney was washed out daily with a solution of peroxide of hydrogen. The patient was discharged on Mar. 27, feeling very well; but there was a slight discharge of pus from the lumbar sinus.

On April 22 she was much stouter and stronger. A little pus still escaped from the lumbar sinus, necessitating the dressing of the wound every second day. The kidney measured $3\frac{1}{2}$ in. vertically, and 3 in. transversely. The inner border was situated at the anterior scar, $2\frac{1}{2}$ in. to the right of the middle line.

Appendicitis in the Sac of a Strangulated Femoral Hernia.—Dr. H. Rutherford (*Glasgow Med. Jour.*, Sept., p. 196).—A man, aged 79, was admitted to hospital after 4 days' vomiting and constipation. There was distension of the abdomen, which presented the appearance typical of splanchnoptosis—a deep fold across the abdomen near the umbilicus, with fulness below—and a hernia in each inguinal region coming and going as the patient coughed or strained. There was also a small femoral hernia on the right side about the size of a walnut and insensitive to handling. The patient stated that it came and went, but that for the last few days it had been constantly present but not painful.

On opening the sac it was found to contain the appendix and a partial enterocele or knuckle of small intestine, consisting only of a portion of the wall of the tube (Littre's hernia), strangulated and almost black, with some blood-clot on its surface. The appendix was freed from some adherent omentum, and found to be in a state of impending gangrene, thinned, green, and covered with a layer of pus. It was tied above this and the stump was disinfected

the strangulated knuckle of bowel followed it. The sac was separated and tied off and the wound was closed. During the early morning an action of the bowels took place after the administration of an enema, but the patient became weaker and died on the following afternoon.

At the necropsy the stump of the appendix was found apparently in good condition, and the herniated bowel wall did not seem to have been damaged beyond the possibility of recovery. The appendix seemed to have been for a long time in the position in which it was found. There was an abscess about its middle of the size of a small bean, with sloughing wall and containing a concretion. Distal to this there was no recognisable lumen.

See also "REVIEW," p. 633.

Enterectomy for Tuberculous Tumours.

—Dr. J. Crawford Renton (*Lancet*, Nov. 15, p. 1323).—Tuberculous disease of the vermiform appendix is a rare cause of appendicitis. Fitz found only 8 cases of tuberculosis in 257 cases of appendicitis. The propriety of removing tuberculous tissue is fully acknowledged in the case of the bones. This principle has recently been extended to the bowel and the complete removal of a mass of tuberculous intestine gives far better results than a more conservative treatment. One important advantage of complete excision is that the risk of cicatricial stenosis is almost completely removed.

CASE 1.—The patient, aged 11, was admitted to hospital with an acute appendical abscess. This was opened and on the tenth day a faecal discharge took place from the wound. As it did not subside the wound was opened up and the appendix was found to be ulcerated at its base with considerable thickening around the caecum and ascending colon. The appendix was removed and the opening was stitched. This did not heal and therefore the lower end of the ileum, caecum, and ascending colon were re-

colon by end-to-end stitching. The patient progressed favourably and a year after the operation was quite well. The tumour was found to be tuberculous.

CASE 2.—A man, aged 21, had 2 attacks of appendicitis. In the caecal region a movable painful lump of the size of an orange could be felt and evidently there was more than the ordinary inflammatory thickening caused by an appendicitis. On opening the abdomen the caecum and appendix were found involved in a tumour which appeared to be tuberculous; this was removed and the bowel was stitched in the usual way. The patient on the following morning had a sharp attack of hæmorrhage, but this was controlled by gauze packing, the shock from which he suffered being combated by saline injections. The patient gradually recovered. The tumour on examination by Professor Muir was found to be tuberculous.

Auscultation in the Diagnosis of Fractures.—J. Plesch (*Ungarisch. Med. Presse*, Aug. 10, p. 498).—When the usual signs of fracture are absent, or when manipulation is inadmissible owing to extravasation or pain, auscultation of the bones is, in the absence of an X ray apparatus, most useful. The stethoscope is placed on one side of a suspected fracture and the bone is tapped on the other. If there is a fracture and the fragments are completely separated the normal conductivity of the bone is lost and nothing is heard. If, however, the fragments are in contact, there is a loud crackling. If the bone retains its normal conductivity for sound there is no fracture between the stethoscope and the spot percussed. The position of a fracture can be exactly localised by approaching the stethoscope towards the part percussed until the crackling sound is replaced by a clear tone, or, in the case of the fragments being widely separated, until the tap is heard. The best place to percuss is over the epiphysis,

or if this is not possible over the bone nearest to it, for instance, in the shoulder, over the acromion process. The writer employs the phonendoscope, though the ear applied directly to the bone or a stethoscope acts satisfactorily. The exact direction of a fracture is easily determined, and an oblique distinguished from a transverse fracture. The method is especially useful in doubtful cases of fracture of the ribs. Percussion may be made over the rib, the sternum, or a spinous process of a vertebra. A slight fissure of the vault of the skull causes the sound to be muffled compared to that obtained at the corresponding spot on the opposite side; a decided fracture interrupts all conduction. In fractures of the forearms affecting the lower end of the radius or the styloid process of the ulnar the stethoscope should be placed in the first case on the thenar, in the second on the hypothenar eminence, while the hand is forcibly extended. By means of the change in the quality of the tone obtained by auscultatory percussion, the writer also succeeded in localising a patch of caries in a rib, and of osteomyelitis in the fibula. Further experience may show that the method is as serviceable in the diagnosis of diseases as of fractures of bones.

Ulceration of the Cartilaginous Septum of the Nose after Influenza.—Dr. L. de Milly (*Rev. Hebdom de Laryngol., d'Otol., et de Rhinol.*, Oct. 12, p. 429).—A child, aged 5, during convalescence from influenza, commenced to have difficulty in breathing through the nose, which became large and red. There were an odourless sanguinolent discharge and a little fever and insomnia. A small swelling was found on the cartilaginous septum; it was punctured, and one drop of pus evacuated.

Five or 6 days afterwards respiration was easier, the nose was not so large, but there was a peculiar deformity—a depression of the bridge

above the union of the bone and cartilage with enlargement of the lower end of the organ. With the speculum a painless and smooth swelling of the cartilaginous septum was seen, more clearly marked in the left nostril than in the right. Fingers introduced into both nostrils gave a feeling as if they were separated by the mucous membrane of the septum without cartilage.

The diagnosis of syphilis was first entertained, but there was no evidence of this. There were no crusts covering a fissured and papillary surface as in lupus. The probe did not reveal bare bone or an orifice communicating with the other nostril. Syphilis and lupus being thus excluded, the diagnosis was abscess of the septum causing absorption of the cartilaginous septum during convalescence from influenza.

Death from the Rupture of a Tonsillar Abscess.—Alexander Lyons, L.R.C.P. and S. (*Lancet*, Sept. 20, p. 812).—A man, aged 28, was admitted to hospital suffering from left tonsillitis. He was given a warm bath and put to bed where he partook of a glass of milk. About half an hour afterwards the nurse heard him coughing feebly and found him cyanosed. Death soon followed. The necropsy showed that a tonsillar abscess had burst and that much pus had entered the upper part of the larynx.

F. de Havilland Hall, M.D. (*ibid.*, Sept. 27, p. 891).—A young woman suffering from quinsy died suddenly in the night. At the necropsy the larynx was found full of pus. A few cases of death from rupture of a tonsillar abscess are scattered about in medical literature. One is recorded in Sajous's "Annual," 1889, vol. iv., E. 13. In most of the fatal cases the abscess ruptured during sleep. The risk of this accident emphasises the importance of incising the tonsil in suppurative tonsillitis.

OBSTETRICS AND GYNÆCOLOGY.

Oöphorectomy in Inoperable Carcinoma of the Breast.—Alexis Thomson, F.R.C.S. Edin. (*Brit. Med. Jour.*, Nov. 8, p. 1538).—In response to a circular the writer has obtained records of nearly all the British cases. Analysis of these shows that the beneficial results of oöphorectomy are sufficiently established to eliminate any question of coincidence. It is impossible to tell beforehand whether benefit will result or not. The beneficial influence is limited to carcinoma of the breast. There is no age at which the operation is contraindicated; marked improvement has been observed in patients passed the menopause. The best results have been obtained in cancers of slow growth in which the local disease has been submitted to a "complete" operation, and in which recurrence has taken place in the form of isolated nodules in the neighbourhood of the scar. Disease of the axillary or supraclavicular glands, with or without swelling of the arm, yields less rapidly and less frequently, but has been observed to disappear or subside in a large proportion of cases. Metastases in the viscera or bones contraindicates the operation. They are not influenced by oöphorectomy, and when they are present no improvement is observed in the recurrent nodules in the vicinity of the primary disease. In a large proportion of cases there are marked relief from pain and improvement in the general health.

In the majority of cases the beneficial effects are transient and tend to wear off in from 6 to 12 months after the operation. In a limited number the beneficial results are more permanent, extending up to periods of $3\frac{1}{2}$ years. In certain cases beneficially influenced the local disease has become capable of being removed by operation when this was previously impossible.

Thyroid extract was given in the majority of the successful cases, but is not essential. Some of the most gratifying results have been obtained when the drug was not given.

See also "REVIEW," p. 303.

Abdominal Total Hysterectomy for Fibromyomata liable to Obstruct Labour.

—T. Arthur Helme, M.D., M.R.C.P. (*Jour. of Obst. and Gynæcol. Brit. Emp.*, Sept., p. 231).—When a fibroid tumour is so situated as to be an obstruction to labour the usual treatment is well described by Dr. Galabin as follows:—"If a case comes under observation before term an attempt should be made to push the tumour up out of the pelvis. If this cannot be done induce abortion or premature labour if there is a prospect of delivery through the natural passage, unless the patient will accept the alternative of Cæsarean section at term if it proves necessary." Another course is however possible, viz.: to extirpate at once the fibromatous uterus with its contents. In the 2 following cases this method was successfully employed.

A woman, aged 30, married about 2 years, menstruated regularly up to to Feb. 15, 1901, the date of the last period. In May it was noticed that the vagina was becoming shorter, and in June sexual intercourse was almost impossible. On June 24 micturition was impossible and advice was therefore sought.

There was a large fibroid tumour in the pouch of Douglas, filling the pelvis, and compressing the urethra against the symphysis. Under anæsthesia the index-finger could be insinuated with difficulty behind the pubes, so as to touch the tip of the cervix; the mass could not be dis-

placed from the pelvis even in the Trendelenburg position. It was therefore decided to remove the uterus and tumour.

On June 29 the abdomen was opened with the patient in the Trendelenburg position. So firmly wedged was the tumour in the pelvis that the writer could not dislodge it until he had tied and cut the round and infundibulo-pelvic ligaments on both sides. The tumour and uterus were then drawn out, the uterine arteries were secured, and the uterus was extirpated *in toto*. A gauze pad was passed down into the vagina from the abdomen, the vaginal roof and peritoneum were completely closed by silk sutures, and the abdomen was closed. The parts removed weighed 5 lb. The temperature never rose above 99·8°, except on the eighth day, when, the breasts being a little tender, it reached 100·6°. Next day it fell to 99·6°.

Figs. 1 and 2 show the parts removed. Fig. 1 gives a lateral view, showing the relation between the cervix, body of uterus, and tumour. Fig. 2 is taken from the front, the body of the uterus having been opened to show the relative positions of the foetus and tumour. In this case there was no question of waiting for full term in the hope of saving the child: operation was demanded at once by the urinary complication.

CASE 2.—A woman, aged 32, married 6 years, was seen on Nov. 26, 1901, complaining of abdominal pain and irregularity of menstruation. One month the amount would be large, the next month there would only be a show, and not infrequently there was amenorrhœa for 2 or 3 months. There was a severe period in Sept. and a slight one in Oct. Gradual enlargement of the abdomen had been noticed for 2 years.

There were several fibromatous nodules in the uterus and a large tumour in the pouch of Douglas, the cervix being drawn up behind the pubes. There was no milk in the breasts, but the morning sickness suggested early pregnancy. Extirpation of the uterus was advised. On Dec. 13 the abdominal tumour was much larger and, in places, softer; the mass in the pouch of

Douglas had grown considerably, and filled the cavity of the pelvis; the cervix was softened, milk was present in the breasts. Pregnancy was therefore diagnosed. The alternatives of waiting until term (if possible), when Cæsarean section could be performed, or immediate hysterectomy, (preferably) were put before the patient. The latter was accepted.

The writer performed abdominal total hysterectomy on Dec. 15, ligaturing the broad ligaments from above downwards, removing the entire uterus with the cervix intact, cutting closely upon the cervix, closing the peritoneum below and above, and similarly closing the abdominal and vaginal incisions, no drainage being provided. The patient did well, the highest temperature being 100·4° on the second day.

Fig. 3 is from a photograph of the parts removed after hardening in formalin and spirit. The weight of the uterus was 4½ lb. This case, like Case 1, illustrates the rapidity of growth of fibromyomata under the stimulus of pregnancy.

As a contrast to these 2 cases the writer records a case in which he induced abortion about the fifth month, because of a fibroid occupying the pelvis, and threatening to obstruct labour.

A woman, aged 40, was pregnant about 5 months. Several fibroid nodules were felt growing in the walls of the uterus, one large fibroma growing from the right side of the isthmus posteriorly, and encroaching seriously upon the pelvic cavity. The uterus was emptied on July 26, 1896. Owing to the great length of the cervix (the index finger could just reach the internal os) and its rigidity, removal of the foetus was exceedingly difficult. Much bruising of the uterine wall must have occurred. Difficulty was experienced in detaching the placenta; as the membranes were adherent, it was necessary to use the curette. On the evening of July 31 the temperature rose to 102·2° and the pulse to 140. The uterus was washed out with corrosive sublimate solution (1 in 2,000), followed by sterilized water. Next day

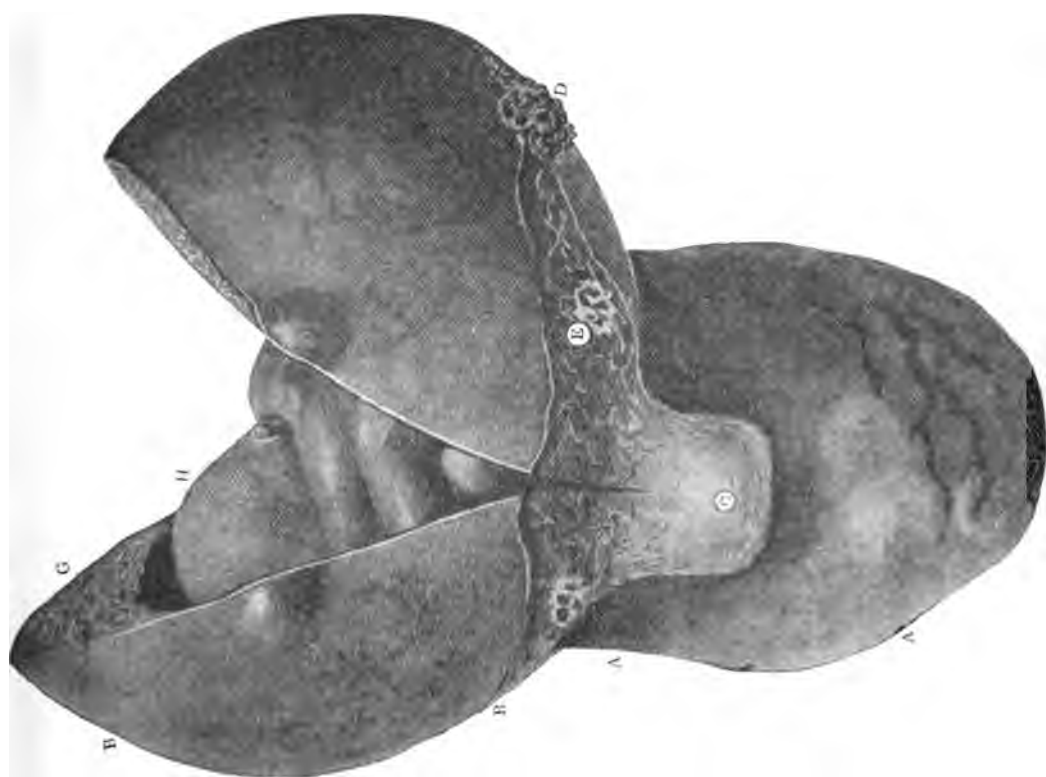


FIG. 2.—UTERUS AND FIBROIDS SEEN FROM THE FRONT.
SAGITTAL SECTION OF BODY TO SHOW FŒTUS AND PLACENTA.
A, pelvic fibroid; B, body of uterus; C, cervix; D, left ovarian
vessels; E, left uterine vessels; G, placenta; H, fœtus.

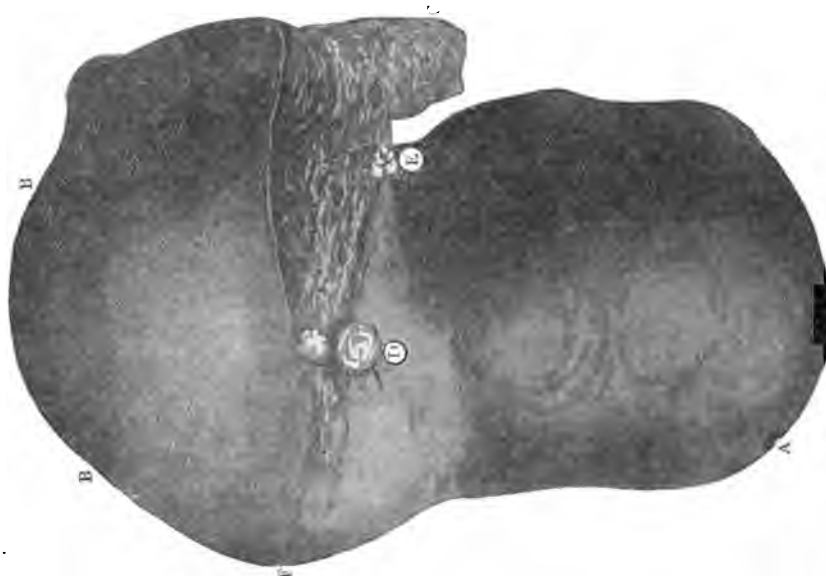


FIG. 1.—LATERAL VIEW OF UTERUS AND FIBROIDS.
A, pelvic fibroid; B, body of uterus; D, right ovarian
vessels; E, right uterine vessels; F, fundus uteri.



FIG. 3.—CASE 2.—VIEW OF PREGNANT UTERUS AND FIBROID FROM THE FRONT.

A, pelvic fibroid; B, body of uterus; C, cervix.

the temperature fell to 98.4° , and the pulse to 115. In spite of antiseptic douching, the temperature again rose; the pulse never exceeded 122 subsequently, but the discharge from the uterus assumed a fæcal odour. The liquid contents of the bowel were evidently escaping through the uterus. Proof of the existence of an intestino-uterine fistula was afforded by the fact that one day while the intra-uterine douche was being given the water collected in the rectum, and was expelled from the anus. Subsequently an abscess formed in the left iliac region. On July 28 it was opened in front and behind above the iliac crest. The intestino-uterine fistula quickly closed, the fluid intestinal contents with small solid particles escaping through the lumbar and iliac incisions. The abscess cavity

was washed out regularly, and on September 3 the tubes were removed. The posterior was closed immediately, but the anterior sinus, which persisted. Along it a probe could be passed for several inches in the direction of the uterus.

It was a long and painful case, the pain being worn out with the continued suppuration. About a year later only a few drops of pus escaped in the 24 hours. After another year the patient was operated upon by a general surgeon. He could not find any intestinal opening, and, owing to the fixation of the colon, a loop of small intestine was brought down and stitched to the rectum. The patient did well, and the opening of the abdominal sinus closed, but only for a time. After some weeks it opened again, and she eventually sank and died.

This case prejudices the writer against the induction of abortion or premature labour, unless the conditions are very favourable. In consequence of the success of abdominal total hysterectomy in the first 2 cases he urges that the operation should be considered as an alternative in obstruction of the pelvis by a fibroid tumour of the uterus during pregnancy.

Simultaneous Extra-Uterine and Intra-Uterine Pregnancy.—John Phillips, M.A., M.D., F.R.C.P. (*Lancet*, Oct. 25, p. 1122).—A married woman, aged 28, had been prematurely confined twice—at about the fifth or the sixth month of gestation. The last pregnancy terminated 12 months before. Prior to the present illness she had seen nothing for nearly 6 weeks and she considered herself pregnant. Seven weeks before while lifting a bath she felt acute pain in the left side. Hæmorrhage from the vagina set in and continued in varying degree. The head of an 8 weeks foetus was found in the discharge. The patient was pallid, had a pained expression and referred her suffering to the left iliac fossa.

Free bright red hæmorrhage was constantly issuing from the vagina. The abdomen was slightly distended and tender, but no lump could be felt. She complained of severe pain on deep pressure in the left iliac fossa. Per vaginam much blood-stained mucus issued from the cervix which was soft and admitted the examining finger to the internal os uteri. The uterus was bulky and pushed to the right by a smooth, fixed globular swelling of the size of a large fist, which occupied the left and posterior quarter of the pelvis, was well defined, and had an undulating surface. In consistence it was soft and elastic, giving the sensation of a dermoid cyst or soft myoma. The uterus was not freely mobile and there was a distinct sulcus between it and the lower portion of the swelling; the sound passed posteriorly and to the right 2½ in.

Under an anæsthetic the tumour was found to be slightly mobile and not closely attached to the uterus. The abdomen was opened. The peritoneum was stained a brownish-purple colour. On opening the cavity several ounces of liquid blood and some dark black clots escaped. The patient was placed in Trendelenburg's position. The lower half of the great omentum was adherent to the parietal peritoneum and was incised when the latter was opened. On passing the hand into the pelvis a sac was found, formed above and anteriorly by the great omentum, below by Douglas's pouch and the left ovarian fossa, laterally by the rectum with appendices epiploicæ, and anteriorly and below by the uterus. Half a coffee-cupful of dark blood clots was removed and a solid smooth ovoid mole of the size of a Tangerine orange was found among them. With an electric light the whole of the pelvic contents were seen; both tubes and ovaries were normal in appearance and to touch, as also were the cæcum and appendix. Several clots were ultimately attached to the surface of the rectum and were left undisturbed. No trace of a cyst wall could be made out. A glass drainage-tube was inserted, and the abdomen was closed. Recovery was uneventful.

The extra-uterine mole was a smooth fleshy oval mass 2 by 1½ in. There was no amniotic cavity. Microscopic examination showed traces of chorionic villi.

The writer has found recorded 28 cases of combined intra- and extra-uterine pregnancy of which 17 are available for analysis. Of these 4 are cases of early, and 13 of advanced pregnancy. The former are as follow:—(1) A 2-para about 8 weeks pregnant aborted. A few days later much pain in the right ovarian region came on. Fever ensued and she died almost suddenly with signs of some internal rupture. The necropsy showed the right Fallopian tube distended to the size of a pigeon's egg, ruptured, and lined with decidual membrane, but no fœtus was discovered. (2) Landon admitted a patient under his care suffering from severe abdominal pains and prostration with signs of peritonitis. She died on the fifteenth day. A necropsy showed in the uterine cavity a 10 weeks fœtus with its decidua; the left tube contained a small fœtus 1½ in. long with umbilical cord and chorionic villi. The wall of the tube was lacerated and the fœtus was partially between the layers of the broad ligament. (3) Mond gives details of a case of a 6-para, aged 28, upon whom he performed laparotomy for presumed tubal rupture ("Review," Vol. III., p. 64). The right tube contained a blood mole of the size of a hen's egg, while the left was normal. The uterus was enlarged to the size of a 3 months gestation. Five months later normal labour occurred. (4) Walther reports the case of a 3-para, aged 35, who when 3 months pregnant had much abdominal pain and uterine hæmorrhage. Before the fourth month laparotomy was performed and showed a distended left Fallopian tube, containing a tubal mole and a bicornute uterus. The tube was ligatured and removed, but on the third day abortion set in and exploration of the uterine cavity showed the placenta in the right cornu and a thickened decidua in the left.

Presumably the present case was one of twins; the large majority of the instances reported are

so without doubt. In the uncertain cases one of the pregnancies consists of a mole or is dead and undergoing degenerative changes. Thus only a surmise can be made as to the age of the gestation. The question whether this mole was expelled from the left tube or was primarily abdominal cannot be decided. Much evidence has been brought forward to show that a tube after expulsion of a mole rapidly assumes its normal appearance. At the operation the left tube was certainly perfectly healthy. Operation was obviously necessary in this case. The presence of unabsorbed blood in the peritoneal cavity several weeks after the accident and the continuous uterine hæmorrhage were weighty reasons in its favour. In the 4 cases described above the 2 patients operated upon survived and the other 2 died.

The 13 cases of advanced pregnancy may be arranged as follows:—Laparotomy and Cæsarean section, 1 case with 1 death; Cæsarean section and subsequent laparotomy to remove extra-uterine gestation, 1 case with 1 death; labour at or about term and subsequent laparotomy, 4 cases with 2 deaths; primary laparotomy followed by expulsion of the intra-uterine foetus alive or macerated, 2 cases with 1 death and 1 recovery; labour at term, subsequent destruction of extra-uterine foetus by stilette, 1 case with 1 recovery; version at term, or normal labour and the extra-uterine sac left alone, 2 cases with 2 deaths; labour at term and subsequent passage of macerated foetus piecemeal by vagina or rectum, 2 cases and 2 recoveries.

These figures show that the total mortality by all methods of treatment is 54 per cent. Nevertheless labour should, as a rule, be allowed to be completed and the extra-uterine sac treated by laparotomy.

See also "REVIEW," Vol. II., p. 124, and Vol. V., p. 380.

Emmet's Operation as a Preventive of Abortion.—G. Ernest Herman, M.B., F.R.C.P. (*Jour. of Obst. and Gynacol. Brit. Emp.*, Sept., p. 256).—The cervical canal is kept closed during pregnancy by the tonic contraction of its muscular fibres, so that the uterine contents are not expelled, although the uterus contracts continually. The first step in labour is the inhibition of these muscular fibres. Hence it may be inferred that weakening of the cervix, by extensive laceration, leads to premature expulsion of the contents of the uterus, and that if the cervix be strengthened by repair of the laceration abortion might be prevented. In the following cases Emmet's operation was performed upon healthy women who complained only of repeated abortion, of which the only cause discoverable was laceration of the cervix. The following 3 cases are the only ones in which the writer has done the operation for this cause alone, and knows the result.

CASE 1.—A woman, aged 30, had had 3 children, the last 3 years before. Since then 3 miscarriages had occurred, the last 6 months ago. July 16, 1897, rent in cervix repaired by Emmet's operation. July 16, 1898, delivered of a full term living child.

CASE 2.—A woman, aged 37. The first 5 pregnancies ended in the birth of premature dead children. Then a living child was born at 7 months. Then 2 years of sterility, and then 8 abortions. Aug. 4, 1897, a deep tear in the cervix repaired. In June, 1898, a living child was born at 7 months. The laceration of the cervix must have been only one of the causes of the repeated abortions.

CASE 3.—A woman, aged 29. She had had 3 children, the last 2½ years before. Since then she had had 5 miscarriages. On Dec. 31, 1899, bilateral lacerations of the cervix were repaired by the operation. The next pregnancy ended in abortion; but the following one went to term.

